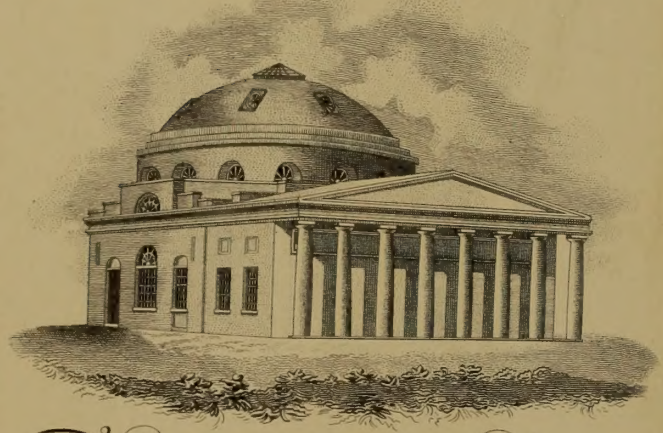
JUN 13 1940

LIBRARY
OF THE
School of Medicine



University of Maryland

University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

The project team who investigated and corrected the tables of contents were Richard J. Behles, Historical Librarian/Preservation Officer; María Milagros Pinkas, Metadata Management Librarian; Angela Cochrane and Carol Harling-Henry, Resources Division; Sarah Hovde, Abra Schnur and Megan Wolff, Services Division.

These dissertations were digitized in 2011-2012 and are available at the UM Digital Archive (archive.hshsl.umaryland.edu) and the Internet Archive (www.archive.org).

(CORRECTED TABLE OF CONTENTS)

UNIVERSITY OF MARYLAND

THESES

1882 (c)

Author	Title	Notes
Gay, William Frederick	Gout	
Furman, Davis	Non-Identity of Scrofulosis and Tuberculosis	
Martin, George M.	Bronchial Asthma	
Braswell, James C.	Digitalis	
Hollifield, Horatio B.	Belladonna	
Schwatka, J. Bushrod	Enteric Fever	
Kinard, Wesley	Specific Remedies	
Russell, R. J.	Gun-shot Wound of General Garfield	(noteworthy calligraphy on title page)
Hundley, J. Mason	Opium	
Pitts, James D.	Fractures	
Smith, Ballard R.	Gout	(no title page)
Keith, Joseph P.	Stricture of the Male Urethra	
Pennington, J. Graham	Typhoid Fever	
Deets, James E.	Malignant Tumors	

HSHSL 2012 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1851-1892; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

Author	Title	Notes
Hollingsworth, Charles Milton	Phosphorus	
Eppes, Victor M. Jr.	Management of the Pregnant Woman and Normal Labor	(no title page)
Berlanga, Alberto	Pleuritis	
Hammond, Robert L.	Inflammation	
Banks, Alexander R.	Laryngitis	

HSHSL 2012 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1851-1892; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

UNIVERSITY OF MARYLAND

THESES

1882 (c)

Gray, W. F.	Gout	15p.
Furman, Davis George	Non-Identity of Scrofulosis and Tuberculosis	20p.
Martin, G. M. James	Bronchial Asthma	22p. (partially faded ink)
Braswell, J. C. Horatio	Digitalis	25p.
Hollifield, H. B. Bushrod	Belladonna	20p.
Schwatka, J. B. Kinard, Wesley	Enteric Fever	20p. (partially faded ink)
Linard, J. W.	Specific Remedies	22p.
Russell, R. J. Mason	The Gun-shot Wound of General Garfield	47p.
Hundley, J. M. James	Opium	22p.
Pitts, J. D. Ballard	Fractures	20p. (partially faded ink)
Smith, B. R. Joseph	Gout	24p.
Keith, J. P. Graham	Stricture of the Male Urethra	26p.
Pennington, J. G. James	Typhoid Fever	23p. (partially faded ink)
Deets, J. E. Charles Milton	Malignant Tumors	23p. (partially faded ink)
Hollingsworth, C. M. Victor	Phosphorus	22p.
Eppes, V. M. Jr. Alberto	Management of the Pregnant Woman and Normal Labor	22p. (partially faded ink)
Berlanga, Alberto Robert	Pleuritis	24p. (partially faded ink)
Hammond, H. L. Alexander	Inflammation	26p. (partially faded ink)
Banks, A. R.	Laryngitis	32p.

/Mb
18992

LIBRARY

Gout.

The disease called gout is closely allied to Articular rheumatism, and the two affec=tions have by some been considered identical. They will be seen however to differ in many respects, as regards their Morbid anatomy, Clinical history, and Causation.

Gout is a disease characterized by a deposi=tion of urate of soda in a chrystal=line form in the cartilages, and elsewhere among the fibrous tissues. It is usually accompanied with constitutional symptoms, and grave lesions of important organs. When recent the deposit is a cream colored mass, which

becomes hardened after a time.
And is presented in a chalk
like mass. The articular surface
opened after death have been found
incrusted with the Tophaceous matter
and the surrounding ligaments
are sometimes coated by it.
It may extend to the tendons and
their sheaths, and also to the tendinous
expansion of the muscles, but rarely
to the osseous structure. It leads to
anchylosis of the joint and deformity.
This deposit with in and around
the Joints is peculiar to Gout, as it
occurs in no other disease. It is
not confined strictly to the joints
and ligaments. for it may attack
some of the internal viscera, as
for instance the kidney is not

unfrequently the seat of lesion.
Gouty patients are liable also
to degenerated arteries, Valvular lesions,
and other morbid conditions of the
heart. We may also sometimes have
Emphysema of the lungs, and Chirotic
liver. The first attack of Gout
almost invariably comes on suddenly,
and at night. The pain attacking
the ball of of one of the great
toes, usually the metatarso phalongeal
joint of the right. The patient
goes to bed generally in his usual
health, with out any premonitory
symptoms, and awakes during
the latter part of the night with
severe pain in the joint I have
referred to. The pain is indeed

excruciating. and you dare
not touch it. and any indication
on the part of the physician to
do so will only be productive of
exciting the fear of the patient.
And his screams will plainly the torture
to which he is subjected. He cannot
bear the weight of the bed clothes. the
slightest jar of his bed. His sufferings
often become aggravated by cramp
and involuntary twitchings of
the muscles. He becomes hot and
restless. shivers and sometimes
has repeated rigors. And after
tossing about for sometime finds
relief in abundant perspiration
Towards morning he falls into a
comfortable sleep lasting it may be

for some hours, from which he awoke
feeling very much better but with a
toe red and swollen, and looking
angry enough to renew its attack
with all its former vigor and intensity:
but happily for the patient it does
not often immediately carry
out its threats, for he may feel
comparatively well during the
day, and limp about on his
afflicted limb. Towards evening
the symptoms again begin
to make their appearance, and
probably about the same time
as on the previous night he is
again subjected to the tortures
of another attack, but which
like the other will be followed

in duration by a remission.
And thus these nocturnal exacerba-
=tions and matutinal remissions come
on with comparative intensity for
two or three successive nights.
They then gradually diminish
in severity until at the end
of a week or ten days all
the febrile symptoms, and all
acute suffering will pass away.
But the affected joint is likely
to remain swollen and tender for
a much longer time.

The febrile
symptoms from which the
patient suffers during the attack
are of a remittent type and
attended not only with shivering

and rigors but frequently with furred tounge and loss of appetite. He is often constipated and his urine is high colored and scanty.

It sometimes happens that Gout may attack both great toes simultaneously. And not only the toes but the ankles, knees and other joints may successively suffer. In this respect it resembles Articular Rheumatism.

The first attack of Gout may be the last but more frequently the second attack supervenes sooner or later.

The second attack may come on in a year or two but in some few cases it may be eight or ten years. Other attacks come on at first separated from one another by intervals of ten or twelve months. And gradually approaching one another until the patient, though, still liable to exacerbations, is hardly ever free from suffering.

Each attack as a rule implicates a larger number of joints. Those which have been most frequently affected generally suffer most pain

The patient becomes more and more crippled. The general health deteriorates, and death usually dependant on some visceral complication puts an end to his sufferings.

Gout is generally easily diagnosed. The chief joints between it and Articular Rheumatism - that Gout usually attacks the smaller joints, mainly the metatarso-phalongeal joints of the Great toe. The formation of Chalk stones not only in the joints but with the perichondrium of the Cartilages of the ear and Eyelids and other superficial positions.

Causes

Gout is a diathetic disease. The diathesis in a certain proportion of cases is congenital and inherited, or it may be acquired. It occurs rarely under puberty and is rare after seventy.

It occurs much more frequently in men than in women. Those who live a luxurious and sedentary life and are addicted to the use of wine or malt liquors are particularly liable to it. Thin or nervous

Causes which may determine the attack of Gout.
Prolonged intellectual exertion. Anxiety of mind. bodily fatigue. exposure to cold and damp. excessive indulgence in eating and drinking. It may sometimes come on without any appreciable exciting cause.

The immediate danger to life from Gout is slight. if it ever proves fatal through itself it is by its irregular manifestations and in many if not most cases which death occurs it is attacking some of the vital organs

Treatment.

In reference to the treatment of Gout we how to consider what should be done during the inflamma= =tory attacks: What should be done during the inter= =vening periods. Much differ= =ence of opinion prevails as regards the first questions. Some eminent authors regard all attempts to relieve pain or Cut Short the attack as prejudicial. But these views are not generally held as regards their integ= =rity, and we would not hesitate now to use those remedies

the efficacy of which has been proved by experience,

The most valuable remedy we now have is Colchicum usually given in from 20 to thirty drop doses of the wine of Colchicum root. Veratria may also be used but it does not possess as good antipodagral power. Guiacum is also a valuable remedy. Colocynth forms the base of some of best known remedies. The Lithia salts have been highly recommended by some for their power of dissolving the urates. When it assumes a Chronic character

We may employ the same remedies but with less rigor. At this time Iodide of Potassium may be used with good results.

We should give medicines to cause free action of the kidneys with alkaline diuretics. We should remove all dyspeptic symptoms and keep the bowels well regulated. The diseased joints should be kept at rest. They should be wrapped in cotton or wool dipped in alcohol and covered with oiled silk. The treatment in the inter vals should be to regulate the diet which should consist

and nutritious. such as milk eggs. soups. and the like.

He should take plenty of healthy exercise in the open air should dress suitably warmly and guard against any unnecessary exposure.

Tonics, Iron

Quinine, Hot baths, Turkish baths. change of air and scene are often beneficial in treatment of Chronic Gout.

Thesis

by

Davis Furman — S.C.

— Subject —

Identity of Scrofulosis and

Tuberculosis.

— Feb. 7th 1882 —

On the non identity of Scrofulosis and Tuberculosis.

In adopting this as the subject of my Thesis, I am aware of the fact, that I have selected one of the most obscure questions in the province of medicine; one on which there is little unanimity of opinion among leading pathologists. The Tyro therefore feels at liberty to advocate either side of the question, as to the identity or non identity of the diseases mentioned, without fear of being condemned by all of the more learned representatives of the medical profession.

It is useless to say, that what is to appear in the following pages will be merely a reiteration of the views and con-

-clusions of others, on the diseases in question. The term Scrofula we will employ in the sense ordinarily attached to it in medicine, i.e. a morbid state of system usually characterized by indolent glandular tumors, chiefly of the neck; suppurating slowly and imperfectly and healing with difficulty: leaving a cicatrization scars." By the term Tubercle we will only include that abnormal condition of the constitution in which the gray variety, & the yellow variety in which the characteristic giant cells appear.

For these are the only forms universally admitted to be true tubercle and as regards the diagnosis of which there can be no doubt

Without further preliminaries I will take up and consider, their Anatomical characters, Etiology and Clinical history respectively.

According to Balman in subjects of Scrofula the glands of the neck are the seat of lesions in about 81 per cent. The lymphatic glands generally, the skin, mucous surfaces and the osseous system are the usual tissues in which Scrofula manifests itself. The scrofulous subject has a special vulnerability, so that trivial causes induce inflammation of a low form which is prolonged in duration. Various forms of skin disease lose about the mouth eyes &c are common

In some of the above cases caseous matter in the bronchi was the only evidence of tubercle. No doubt many of the conflicting opinions on this point may be traced to the difficulty of differentiating scrofulous inflammation and disintegrated tubercular matter.

Histologically considered the morbid cells of tuberculous and scrofulous growths very closely resemble each other. According to some pathologists there is some microscopic difference: the scrofulous cell being round and containing two or three nuclei while the tubercular is irregular and contains many nuclei. In fact, the latter resembling very much

the myeloid cell of some forms of can-
-cer. The tuberculous structure is
said to differ from this form of cancer
only in point of vascularity.

Arguments derived from their
microscopic characters amount to little
even if they showed that they differed
in no particular: for, as far as the micro-
-scope can detect the white blood cor-
-puscle and the pus cell are identical.

The obscurity of the Etiology
of the diseases in question has led to
a great deal of discussion. It has
been thoroughly settled however that
they are both hereditary diseases and
that they may both be induced in those
having little or no predisposition by

such causes as give rise to a defect or perversion of nutrition — as for instance bad air confinement in dark apartments, poor food, vicissitudes of climate &c.

It can not be maintained, on this reason, that they are the same disease for dyspepsia, rickets, nervous and other dissimilar diseases, which are hereditary may also be induced by the above causes.

It is held by many that tubercle in the offspring is often the result of scrofula in the parent. But how much does the practical diagnostician when trying to establish a supposed case of consumption, ask if any of patients relatives ever suffered from hip joint disease or had enlarged glands of the neck. The ques

-tion as to whether any consumption exist in the family, on the other hand, is always asked, under such circumstances. This tubercle may be caused by the absorption of scrofulous material. I am not prepared to deny, but that the products of scrofulous inflammation have any specific power of producing tubercle experiments and observation have not shown. It is true that the experiments of Villemin and others seemed to demonstrate that tubercle was a form of scrofula, but other observers of equal eminence and reliability found not only the inoculation of scrofulous material, but the introduction under the skin of any caseous material and a variety of foreign substances, even irritation may be efficient in producing local tubercle in the guinea pig and rabbit.*

*Some authorities hold that these deposits are more nearly analogous to the formation of pigmentation than to tubercle.

The frequent occurrence of Scrofula without tubercle following it is a serious objection to the resorption theory. Hartshorne states that there is no demonstration whatever either of a specific Scrofulous virus or of the origin of tubercle in any true sense by infection. He also says that Prof. Flint in a large number of carefully analyzed cases obtained ample clinical evidence of the small proportion taken by inflammation in the pathogency of consumption.

When Tubercle occurs after Scrofula it may be claimed with some plausibility that the causes which give rise to the latter also give rise the diathesis of former and not that the former is caused by the latter.

"Scrofula exists under all conditions of soil climate and elevation". These influences bear a potential relation to the development of tubercle

In climates with frequent alternations of cold and warmth the disease is much more common than in such as are either uniformly warm and dry or cold and dry. The altitude of [illegible] affords complete protection from tubercle. Jaccoud in observations extending through a period of [illegible] years found this to be the case in the villages of the Alps. According to Hjaltelin Iceland enjoys exemption from it; it is rare in Russia and Sweden and almost unknown in the tropics.

Statistics show that there is a much greater proportion of deaths in the northern than the southern portions of the U. S. from this cause.

The inhalation of irritating [illegible] iron, flint [illegible] favors the [illegible] of tubercle. This tendency is [illegible] [illegible] [illegible]

Without presenting any [illegible] of Scrofula they generally die of tubercle in our latitude.

We will now cursorily review the Clinical Histories of Scrofula and tubercle and attempt to contrast some of their [illegible] features.

Scrofula is a disease of early life; manifesting itself about the time of the first dentition: from the third to the seventh year its effects are most marked and frequent, appearing in the various forms already mentioned. Rarely does it develop after puberty. The inflammations of scrofula are of an essentially chronic nature and ultimately tend to recovery either by absorption or suppuration, provided the sanitary conditions are at all favorable. "It is remarkable how fare a share of general health may coexist with large scrofulous ulcers." Among the most robust adults

are those who in early life suffered with Scrofula.

Death sometimes supervenes protracted [illegible] -puration of bone, from Scrofula.

Tubercle may be developed at any time of life; pathologists are pretty well united in the opinion that from puberty to middle life and of this period, from the twentieth to the [illegible] year, is the time during which the majority of cases occur. Tubercle is both acute and chronic.* The degree of prostration is often entirely out of proportion to the amount of tissue destroyed or impaired. Deterioration of general health often precedes the appearance of symptoms of the disease and is always an attendant of it.

Other with coming exacerbations at which ~~time~~ the temperature rises to 100° or 105° often attends this disease.

* [illegible] that the average duration of the disease is from [illegible] months.

In childhood more frequently than in adult life are the membranes of the brain, the mesenteric and bronchial glands, the localities in which the tubercular lesions are most marked and to destruction of them, death is often directly attributable. In addition to statement already made as to the probable overestimate of the number of cases of tubercular meningitis, Bouchut, Rillet, Litten and others have observed in autopsies of cases having all the typical symptoms of it, many showed no evidence of tubercular deposit. In the adult death is usually the immediate result of the invasion of the lung-substance by the disease. It at times follows directly perforation of the intestine due to breaking down of tubercular masses in their walls. When the disease terminates

favorably the tubercular deposits usually are either discharged or undergo fibroid change.

The health after recovery or appearant recovery, is apt to be more or less impaired and slight exciting causes are often sufficient to revive or occasion its development again.

In tuberculosis certainly in the acute forms of it death is the rule and recovery the exception. In Reynolds System of Medicine before giving Sir W. Gunners tables, which I propose using, Aitken says — in all constitutional diseases of children and adults the seat of such lesions of structural change are characteristic of the peculiar constitutional affection, as for example Rickets, tuberculosis, scrofulosis and inherited or congenital Syphilis

Each of these constitutional diseases is characterized by certain premonitory phenomena, which if taken singly may not justify suspicion, but collectively afford presumptive proof. The following are the leading features as pointed out by Turner in his tables — Scrofulosis — Temperament phlegmatic, mind and body lethargic; figure heavy; skin thick and opaque; complexion dull pasty-looking; nostrils expanded, face plain, lymphatic glands perceptible to touch; abdomen full, ends of bones rather large; shafts thick.

With these we will compare the physical appearances of the variations from the health standard in tuberculosis — which are as follows — Nervous system highly developed, mind and body active, figure slim; a deposit of tissue

small in quantity; organization generally delicate; skin thin; complexion clear, superficial veins distinct; blush readily; eyes bright and pupils large; eyelashes long; hair silken; ends of bones small shaft to thin, and rigid; limbs straight. Children subject to it, usually cut teeth walk alone and talk early.

According to the tables of the same author

The leading pathological tendencies of Scrofula are — inflammations of mucous membranes of a peculiar kind, so called strumous ophthalmia, inflammation of the tarsi, catarrhal inflammation of mucous membrane of the nose, pharynx, bronchi stomach and intestines, inflammation and suppuration of the lymphatic glands on slight irritation; obstinate diseases of

skin and caries of bones.

Of tubercle are fatty degeneration of liver spleen and kidneys; growth of tubercle and consequences thereof; inflammation of serous membranes. At the [illegible] lengthening my paper with other reasons which might be adduced. I will now briefly recapitulate. 1st I have attempted to show that those parts of the body in which pathological developments of scrofulosis generally occur are not the usual points of departure from health in tuberculosis and vice versa. 2nd that large local manifestations of scrofulosis often work without there being evidence of the existence of the disease in other tissues. While on the other hand of tubercular deposits are found in the organism we may, with certainty, expect to

existed from childhood: while in the majority of cases tubercle first appears after puberty and at times attacks the aged, without ever having been recognized before. 8th That scrofula is always a chronic disease; while tubercle is often acute. 9th The existence of scrofulous deposits do not generally interfere with enjoyment of good health; that with tubercular formations health is always impaired. 10th That the rule with scrofula is recovery, usually complete: with tubercle, is death: when recovery is the result it is seldom complete. And last, the considerations set forth in Jenner's tables. In conclusion — in reviewing these and other points of difference that might have been cited; and remembering that the time has not long passed when scrofula & syphilis and host of other diseases now known to be different were [illegible] identical, I feel justified in concluding, contrary to the prevailing opinion, that scrofulosis and tuberculosis are not identical. Respectfully submitted to Faculty of Univ. Maryland, [illegible] 3rd 1882 [illegible]

essential anatomical alterations,

belongs to the functional

with the general opinion, by

absence of anatomical alter-

audible whistling and rattling

Thesis.

Respectfully Submitted

to

The Faculty of Music

of

University of Maryland.

By

Jas. D. Parnell

of

North Carolina.

1884.

Gentlemen

In submitting
this paper the writer feels
constrained to acknowledge the
fact that he lays but little
claim as to originality, and
indeed from the very necessity
of the matter, but little could
be expected. He has however
endeavored to strip the ideas
here expressed of their mere
words and to clothe them as
well as possible in his own
language.

Respectfully
Jas R. Bramwell

University Hospital.

Digitalis.

Digitalis has been known as a [illegible] from the earlier modern times, though it is probable that its powers were entirely unknown to the ancients. Upon investigation we find that it is said to have [illegible] in the London Pharmacopoeia as early as 1721, though afterwards discarded. It did not, however, come in general use, and consequently attracted but little attention, from the profession until it received the plaudits of the renowned Dr. Withering in 1785. Soon after the truth of its virtues had been shed upon the professional mind by the labors of this eminent gentleman, its important properties were soon acknowledged, and now [illegible]

from the wide range of its therapeutical application, and its powers of almost immediately relieving conditions so eminently perilous and dangerous to life, it holds a rank in the Physicians armamentarium inferior only to a very few of his most esteemed remedies. Digitalin. This is the product obtained from the Digitalis purpurea — the Foxglove. a beautiful plant, biennial or perennial, indigenous in Europe and somewhat largely cultivated in this country as a garden flower and to a considerable extent by the Physician as a medicinal agent. Both the leaves and seeds are endowed with medicinal properties, the seeds to a greater extent than the leaves, but the latter are preferred as it is presumed solely on account of the greater quantity

produced. They should be collected in the second year of the plant, about the period of inflorescence, and only the full grown and fresh should be thus in. They should be dried by a moderate heat, kept in well closed tin canisters, and, if powdered, in tightly stoppered bottles from which the light should be excluded. The mid ribs and footstalks should be rejected. The leaves should be dried and preserved separately, and not put up in the form of oblong cakes so often found in our shops, for they are apt to be deteriorated, either by the heat used in drying them or by decomposition consequent on the leaves being pressed together while moist. The properties of lighter leaves are somewhat characteristic and it is

very important that a physician should be familiar with them, as it is by the senses alone, or principally, that he is to rely for a test. The leaves are attached to the stems by short winged footstalks, are ovate, about eight inches long and three in width more or less pointed and obtusely serrated on their edges, with a wrinkled, velvety surface, the upper of which is of a deep green colour, the under more downy and paler. When fresh they are inodorous but when bruised they acquire a faint narcotic smell. Their taste is bitter and somewhat nauseating and their colour when dried [illegible]. In powder they are of a dark green. As met with in shops Digitalis leaves are very variable in strength,

owing partly to the adulteration prac-
tised by those who prepare them, and
to changes after collection; yet there
are few medicines in which it is
more desirable to have a pure
article, and one of uniform
strength. As already stated the test
on which the physician is to rely
is that of the senses. He should be
careful to use only the leaf itself,
that it has a deep green colour and
no brownish stains, and that its
bitter and nauseating taste be
present.
Digitalis imparts its virtues both to
water and alcohol. Its virtues reside
in a very peculiar principle called
digitaline, which exists in both crys-
talline and amorphous forms.

The amorphous form — of
Homolle and Quevenne — is quite active
and considered by some authors equal
to the crystalline form in strength.
Physiological investigations have
shown that crystalline Digitalin
— Digitalin — of Nativelle — is really
an active principle and represents
all the powers of the drug. It oc-
curs in needle shaped crystals and
is very bitter.
Preparations. The Officinal Infusion
— Infusum Digitalis — is prepared by
macerating a drachm of the leaves
in half a pint of boiling water and
adding a fluidrachm of tincture of
cinnamon. The dose usually recom-
mended is half a fluid ounce.

The Tinctura — Tinctura Digitalis — is made in the proportion of one ounce to half a pint of diluted alcohol. Dose M. v — ʒi. Eight minims of this preparation are equal to one grain of the powder. The fluid extract — Extractum Fluidum Digitalis — is prepared in the ordinary method of making such preparations, and the dose is M. v — ʒß. The solid extract — Extractum Digitalis — is prepared in the usual method of manufacturing this class of medicines, and the dose is gr. ss. grs ii. Digitalinum — Digitalin — is prepared as recommended by Homolle and Quevenne by forming an infusion precipitating inert matter by subacetate of lead precipitating the excess of the lead salt by carbonate and phosphate of soda,

precipitating the lime by oxalate of ammonia, and then treating the filtered liquor with tannic acid. This forms an insoluble compound, which is mixed with protoxide of lead, then dried, and treated with alcohol. The oxide of lead separates the tannic acid, and the digitalin is dissolved by the alcohol, from which it is separated by distilling off the latter. It is purified by highly concentrated ether, which leaves the digitalin sufficiently pure for use. It is a white or yellowish white powder odorless, and has an intensely bitter taste. Soluble in alcohol and acids, but almost insoluble in water and ether. Dose one eighth of a grain. It is frequently given in the form of granules

containing one sixtieth to one thirtieth of a grain.

Antagonists and Incompatibles. The cinchona preparations, acetate of lead, sulphate and tincture of the chloride of iron, are chemically incompatible. Tannic acid and its preparations diminish its activity. Opium, aconite and the cardiac paralyzers antagonize digitalis to some extent. The most complete antagonism exists between digitalis and saponine, a substance allied to senegin. Synergists. Cold, ergot and belladonna increase the activity of of digitalis.

Physiological Actions. Digitalis has a very disagreeable, bitter taste. On mucous membranes and skin

denuded of its cuticle, it acts as an irritant, and if continued for a sufficient time, causes inflammation, sometimes followed by ulcers. In large doses it gives rise to nausea and vomiting and sometimes fever. In some subjects, even when the dose is small, loss of appetite results; but in others the appetite is increased. The active constituents of Digitalis diffuse into the blood but nothing is positively known as to its action on the blood, or its influence if such it exerts any, on the morphological elements. On the Heart & Pulse as the history of no drug has there been such a general and thorough revolution of opinion as we find regarding the modus operandi of Digitalis.

No later than 1856, we find digitalis classed by authors of great eminence among those agents which tend to depress the nervous system, while by reference to the text books of to day we find it placed with even greater positiveness, by those who are equally capable of observing its actions for good, among those remedies which directly tend to increase functional activity. The great majority of observers agree, however, in the statement that digitalis diminishes the number of cardiac pulsations when given in properly regulated doses. This has been noticed not only in man but in the lower animals. In some carefully conducted experiments upon the horse by Bouley and Reynal of the veterinary

school of Allopathy, the result when the medicine was given in proper doses was to reduce the number of pulsations and also the frequency of the respirations. The degree which the reduction is sometimes brought is very great occasionally falling as low as fifty in the minute. It is with regard to the force of the hearts action however in respect to which we find authors disagreeing "I have often noticed" said Dr. Hood that with the diminution in the frequency of the pulse there is an increase in its volume but not as some authors have supposed in its force. On the contrary the resistance under the fingers is usually if not invariably diminished in the normal state of the system, and if

the influence of the medicine is increased, it may become extremely feeble." Here, too, we find Dr Sanders, who bases his assertions upon the observations of two thousand cases, affirming that the first action of digitalis is to increase both the frequency and force of the pulse, which sometimes quickly subsides, sometimes continues excited for several days under the use of the drug, though ultimately a reduction may take place. It is, however, to the labors of more recent investigators that we are to look for the true explanation of the modus operandi of digitalis, and here while we acknowledge the genius of Dr Fuller of London in directing the attention of the

profession to its true action, it is with equally just, and even greater pride that we find so closely interwoven with the explanation and establishment of the true action of this important drug, the names of our own illustrious countrymen, Drs. Roberts Bartholow and Samuel C. Chew. These gentlemen claim, and it is now universally admitted by the profession that digitalis prolongs the diastole and increases the vigor of the systole & lethal dose arrests the heart in systole in inducing a tetanic state of the heart muscles. Microscopic examinations of the mesentery and of the web of the frog have definitely ascertained that a marked contraction of the arterioles

-ans place under the influence of digitalis. The increased power of the systolic contractions of the heart and the increased resistance in front from the narrowing of the vessels produce as might a priori be expected a considerable increase of blood pressure. Posture exercises a great influence on the pulse when under the influence of digitalis. This, I believe was first noticed by Dr Brunton of Edinburgh, the pulse which, in his own case, had, under the influence of the drug, fallen from 110 to 40 in the recumbent position was increased to 72 when he sat and to 100 when he stood. On the Respiration as has been already stated digitalis diminishes the number of respirations, though this has

not been so satisfactorily established and reference to man as in lower animals.

On the Temperature. A temporary rise of temperature follows the administration of a lethal dose, but this rise is soon followed by a great reduction

On the Nervous System. In full medicinal doses, digitalis produces headache, a band like feeling around the forehead dizziness, disturbed vision, drowsiness, weariness languor, and it may cause hallucinations, illusions and delirium. It lessens the reflex functions of the cord, diminishes nervous sensibility, both motor and sensory, and impairs electro contractility of muscles, but these effects are not produced by medicinal doses but are toxic in character. On the lateral as might be expected from [illegible] etc.

Physiological actions. It acts similar to ergot, stimulating the muscular fibre to tonic contractions, and in this way arrests uterine hæmorrhage. On the genital organs of man its action is similar, by diminishing the blood supply it lessens the power of erection, and in a secondary manner affects the sexual appetite, producing anaphrodisia. Much difference of opinion exists as to its action on nutrition, by some an increase in urea, by others a reduction has been noted. Dr Pavlow thinks it has no influence in urea formations, and that its variations are accidental. In health digitalis exercises but little influence on the action of the urinary excretion, according to some the

water is diminished but others think it is increased. It is difficult to reconcile these opposing statements in view of the fact recently put forth by Brunton, that the diuretic action of Digitalis in dropsy is not due to increased blood pressure but to a special action on the malpighian tufts.

Symptoms of Poisoning by Digitalis. The effect on the stomach come on soon after taking the drug. Those on the nervous system occur some hours after its administration. Excessive nausea and vomiting with or without purging, griping pains in the stomach and bowels. Thirst and dryness of throat a small and feeble pulse paleness of surface cold extremities and cold sweats

muscular relaxation and debility, head-
ache, vertigo, disordered vision, insensi-
tility to light, dilated pupils, convulsions
and ultimately coma, are the phenome-
na usually present in fatal cases.
The quantity necessary to produce death
has not been determined. Poisonous
symptoms have been caused by taking
a drachm of the powder, but the pa-
tient recovered. The treatment in
these cases consists in emptying the
stomach by emetics or the stomach
pump, administering tannic acid
and supporting the system by brandy,
ammonia &c.
Cumulative effects. Dr. Bartholow does
not think digitalis is cumulative ex-
cept in the sense that Opium,
Belladonna, Strychnia &c are cumulative.

Therapy- Digitalis has an undoubted power to arrest hemorrhage. The mechanism of its action is similar to that of ergot, it slows the action of the heart and constricts the arterioles. In hæmoptysis, when there is frequent expectoration of bloody mucus, with occasionally a mouthful of florid blood, accompanied by fever, it is especially useful. The hemoptysis of mitral regurgitation is amenable to the same treatment. In hemorrhage from the uterus Digitalis is also serviceable, especially in menorrhagia and metrorrhagia of plethoric subjects. Digitalis has been successfully used as a resting post partum hemorrhage from its power of inducing uterine contraction. In purpura and the . . . . .

hemorrhagic diathesis. Digitalis is serviceable when combined with restorative medicines. The worst instances of Digitalis, however, are in cardiac diseases. It may be stated in general terms that it is indicated when the heart's action is rapid and weak, and arterial pressure low, and contraindicated when its action is vigorous and arterial tension high. In simple hypertrophy, which is merely compensatory, Digitalis should not be used. In aortic stenosis with compensatory hypertrophy, the not only is it useless but may produce serious symptoms and even prove fatal. But should aortic stenosis give rise to mitral incompetency Digitalis may then be used with great advantage

Digitalis is useful in dilated heart with mitral incompetency, in diseases of mitral orifice with regurgitation or stenosis, and in dilatation of the right heart with tricuspid incompetency. As respects the rational symptoms of heart disease, digitalis is useful where the cardiac action is rapid and weak tension of pulse low, when there are cough, difficult breathing, dusky countenance, pulsating jugulars, scanty and high colored urine and general dropsy. It may also be stated that the rational signs furnish better indications for the use of digitalis than the physical. The infusion is the best form to use in cases of cardiac disease with dropsy

The antipyretic effect of digitalis is much insisted on by the Germans but Dr. Bartholow states that the results of its use in fevers, as an antipyretic, do not justify its administration. Its scarlet fever its utility is very great; it lowers temperature and maintains the action of the kidneys, thus obviating two principal sources of danger in that disease. If uraemia occur, the infusion is the best remedy combined with other means. On rheumatic fever much testimony has been adduced in favor of digitalis. It is reported to be useful in acute cases with cardiac complications when the heart's action is weak and irregular and when there is difficult breathing,

Cyanosis and general oedema.

Digitalis has been much employed in pneumonia, but as the depression of paralysis produced by it takes place about the time the crisis is to be expected it is difficult to judge of the share the remedy had in the results — Digitalis has frequently been employed with benefit in nervous diseases. The congestive form of hemicrania may frequently be relieved by digitaline granules containing one eighth of a grain. Acute maniacal delirium chronic mania, and delirium tremens are nervous disorders in which digitalis has proved useful. Cases of Exophthalmic goitre, purely functional, have been cured by digitalis.

Digitalis is specially useful in that form of Spermatorhoea in which there are feeble erections frequent emissions and cold hands and feet. Of all remedies Digitalis is one of the most useful we possess in the treatment of Dropsy. It is especially useful in the treatment of Dropsy with valvular lesions. In renal Dropsy from acute Desquamative nephritis of all drugs, Digitalis is of the greatest value. and the best form in which to administer it is the Infusion. Several days usually elapse before any decided result takes place but the flow of urine is then of the enormous.

Thesis

Respectfully Submitted
to
Medical Faculty of
University of Maryland
by
Horatio B. Hollyfield

Belladonna

Atropa - Belladonna - Deadly night shade. So called from its deadly effects. (Nat. ord. Solanaceae) is a perennial plant with herbaceous, branched, downy stems, growing from 2 to 4 feet high

Has dark purple bell shaped flowers, and glossy purplish black berries. It is found wild in the woods of Central and Southern Europe. And along the Caucasus. It is cultivated in the United States.

The leaves, & root only are officinal. The root should be obtained from plants more than two years old. And is from one half inch to one inch thick, foot or more in length

cylindrical above, gradually tapering & fleshy. In the dry state has longitudinal wrinkles of a reddish brown color externally, very much lighter internally (grayish white).

When fresh the root has a disagreeable heavy odor which disappears on drying. The taste is not very marked at first sweetish with a somewhat bitterish acrid after taste. Old woody roots should be rejected for pharmaceutical use.

The leaves are of a bright green color, ovate to oblong from 4 to 6 inches long. The heavy unpleasant odor of fresh leaves, almost disappears on drying. Has a slightly alkaline bitterish or sweetish subacrid

slightly nauseating taste.
The narcotic, and most important principle of belladonna is Atropia, which exists in all parts of the plant, in combination with malic acid; as bimalate, young roots contain 1.6. old roots 0.25. leaves wild or cultivated 0.44 of one per cent of atropine.
It also contains a principle called Belladonine, besides the usual vegetable substances Gum, Albumen & etc. It contains a coloring "atropine"
Atropia $C_{17}H_{23}NO_3$ is efficient. Acid is prepared from root by exhausting with alcohol, (from root) afterwards adding sulphuric acid, then ppt. with Potassa. dissolving atropine in chloroform

& then evaporating Chloroform.
It occurs in the form of yellowish, white, silky, prismatic crystals, without smell, but of a bitter acid taste, soluble in alcohol, less so in Ether, more so in Chloroform, soluble in 300 parts H_2O at 60°F. Strongly alkaline in reaction, forming crystallizable salts with acids, which are soluble in water & alcohol, not so in Ether or Chloroform. The sulphate Atropia is officinal. It is a white slightly crystalline powder, dissipated by heat.
The best test for Atropia is Bromine in Hydrobromic acid which produces a yellow amorphous precipitate, soon becoming crystalline. The physiological test [illegible]

Antagonists Caustic alkalies act on the atropia, Ed, Ammonia is set free.

Physiological antagonists. Physostigma seems to counterbalance the action of belladonna in almost all its influences. Opium antagonizes bellad. in certain ways. Thus: on the intra cranial circulation, the pupil, the respiration, Ed, the Heart.

Belladonna contracts arterioles. Opium dilates them. Belladonna is an antidote for opium poisoning.

Physiological action. Belladonna in moderate aint. whether applied locally or taken internally or hypodermatically; causes a dryness of the mouth throat & stary rex, with a dilatation of the pupil.

The cerebral effects are marked; a sense of tightness, or pain, is felt in forehead, vertigo, noises in ears, confusion of thought, vision is disturbed, objects look hazy, and unnatural, and sometimes smaller, than usual, or sight may be lost. The pupils are widely dilated, spectral illusions are frequent, and the mind is apt to be filled with extravagant ideas. There is often delirium of a peculiar kind, generally of joyous character, or the patient may be occupied for hours saying, or doing same thing over and over, sleep is disturbed, by fantastic dreams, sometimes the delirium is of a violent or noisy description and attended with injury to one self, or to

the attendants. After recovery from poi-
sonous doses loss of sensation of skin
has been noticed. It has no direct
soporific action.

On muscular system: it produces, in
excessive doses, unsteady gait, with
trembling, and incoordination, the pat-
ient being unable to pick up small obj-
ects. Running into objects while trying
to avoid imaginary ones. Deglutition owing
to dryness of throat is almost impossi-
ble - The voice feeble. The urine
retained, on account of the bladder
being paralyzed; or the urine & the
feces may be passed involuntarily. The
upper eye lid may be paralyzed as
well as the accommodation of the eye.

Belladonna has a peculiar action on heart in full doses; it may at 1st produce a slowing, which is soon fall-owed by a rise in fullness & frequency, soon growing more feeble, & in fatal cases becoming thready. The blood pres-sure is augmented, at 1st, owing to more vigorous action of heart & resistance offer-ed by the contracted arterioles. During this period, the whole capillary circulation would seem to be congested, for the exter-nal mucous membranes are dry & there is a diffuse redness of the skin, resem-bling the Scarlatina rash. (but wants the punctate character of this specific eruption).

This over excitement soon exhausts the irritability of the vase motor =

nervous system, the vessels dilate, the
action of heart becomes feeble and the
temperature which had previously in-
creased ½° deg F to 1° deg diminishes
along with the blood pressure
which falls below normal.
Nausea and vomiting sometimes occur.
Belladonna very probably causes a dry-
ness of the mucous membr. of Stomach
and intestines which is soon followed
by increased secretion as proved by
the fluid character of the stools, peris-
talsis is supposed to be augmented
and the calls to stool are more frequent.
The active principle is eliminated by
the kidneys which is supposed to ca-
use the diuresis. If Bella causes any.

or produces any change in blood, they are not known.

As respects the respiration Belladonna increases the number and the depth of the respiratory movement, the increase is not in proportion to the rise in the pulse heat.

The rationale of the various phenomena produced by Bevand are very obscure, and it is impossible to explain them consistently. Yet it may be well to mention the more plausible theory. The increase action of heart is [illegible] by a stimulation of the motor [illegible] of the heart, and by [illegible] of the inhibitory function of the [illegible] not only [illegible]

Medicinal uses: I shall only give a very brief account of the conditions in which [illegible] is applicable —

In the more common inflammation [illegible] cornea [illegible] etc. [illegible] active principle [illegible] [illegible]. [illegible] dilate the pupil, and prevents adhesions anterior or posterior. [illegible] in its action on [illegible] [illegible] in its action. reduces the intra ocular pressure [illegible] [illegible] on the [illegible]. It is [illegible], that when the pupil fails to dilate under influence of [illegible] that this is an indicati-

vesicae, or undue irritability of the mucous membrane of the neck of the bladder.

Facial neuralgia is very often relieved by belladonna used internally, or externally. When deep a solution of atropia, gr 1/2 to 3j may be injected. It does not have much effect as sedative and must be given for a long time in simple neuralgia.

Sick headache accompanied with spasm of the arterioles, where the pallor of face, vertigo, tinnitus aurium, &c. is relieved by the application of Belladonna.

In various kinds of mental disorder characterized by prostration but

state of the arterial tension, [illegible] and state of intra-cranial circulation, contracted pupils, insomnia, etc. Belladonna is good in small doses. It has been given in epilepsy with a fair [illegible] of [illegible]. But must be continued for months.

Belladonna is useful in certain forms of whooping cough, especially in that form characterized by profuse bronchial secretion.

In asthma Belladonna gives great relief during the paroxysm; its effects are most marked when there is profuse expectoration, cold and [illegible] skin; pulse quick, and [illegible] the smoke of leaves may be inhaled.

checking the night sweats of phthisis: it not only checks the perspiration of disease, but also the hyperidrosis produced by jaborandii & etc.

Mercurial, and the salivation attending pregnancy, are relieved by belladonna.

Gastralgia, and the pain of ulcer, is often alleviated by belladonna. So also the vomiting of pregnancy. It may be applied in form of plaster, or ointment to epigastricum. It will also relieve rigidity of cervix during labor.

Sometimes used in skin diseases with good effect. Thus cutaneous neuroses, prurigo, herpes, zoster etc.

Preparations.

Leaves, and root are sometimes given in powdered form; dose - ½ to 1 gr. or may be smoked.

Fluid extract and solid extract are made; The tincture is good form to administer, Dose - XV - ℥ss.

Many other preparations, but at present day Atropia sulph. is mostly used.

In concluding, I can only say, by way of excuse, that my time was limited.

Respectfully

Horatio B. Holcifield.

Washington Co.

Feb. 5th 1882. Ga.

A Thesis on

Enteric Fever

Submitted to the Faculty
of Physic of the
University of Maryland's
School of Medicine for
the degree of
Doctor of Medicine

by

J. Bushrod Thwaites

of

Maryland.

Enteric Fever

Enteric or Typhoid fever has suggested itself to my mind as a suitable theme for a thesis, owing to the fact that it occurs so frequently as to be seen almost every day by physicians who practice in this, my native state. There seems to be a great diversity of opinions, as to what it should properly be called. All agreeing that the names above given it, are open to palpable objections. This, in one case as yet submitted on that [illegible].

long other names
ever may be mentioned
and used widely by
the [illegible]
widely known scene
to prevail over the
whole world, alike in
countries warm, or
cold, [illegible]
climates, in and inhabited
[illegible]

ch is due apparently to living organized particles that have the power of indefinite multiplication Some suppose that one attack confers immunity from subsequent attacks but if this is the case the immunity is much less perfect than the infectious fevers seem to be. Second and third attacks are recorded and relapses are far more frequent than in any of the allied affections

Symptoms and Progress

Enteric fever is ushered in, in a great variety of ways. In some cases it is sudden and decided as Typhus. The symptoms also resembling that disease closely. But more commonly by far it creeps on insidiously and with an undefinable feeling of malaise and feverishness often complicated with more or less gastric disturbance. The patient is often unable to fix the exact commencement of his malady. During

the incipient period of the disease. The patient suffers from chilliness, alternating with flushes of heat. A decidedly increased ~~temperature~~ pulse with elevation of temperature is also seen in well marked cases. Aching in the different limbs and also body with lassitude is also experienced. The tongue becomes coated the appetite vanishes and headache or drowsiness through the day with wakefulness and uneasiness

At night comes on. Vomiting and diarrhoea now usually make their appearance though exceptionally they are entirely absent. Oftentimes during the first week of the fever the patient walks around, only complaining of feeling badly. At, or about the beginning of the second week however. the patient is compelled to take to bed. unless the case is one of unusual mildness, or severity. The symptoms now become more fully

developed, and the fever reaches its acme. Perspirations are now apt to break out notwithstanding the skin is generally hot and dry. The pulse still continues to increase in frequency as does also sometimes the respiration. The tongue now shows a tendency to crack and furrow, or it may clear or become covered with a moist fur. The thirst and anorexia are apt to continue and difficulty in swallowing may be present

from soreness of the throat
The rash will now generally
make its appearance which
consists of rose colored spots
which are raised so that
they are distinctly perceptible
to the touch, and disappearing
on pressure. Sometimes they
will become vesicular and
always appear in successive
crops. Each crop reaching
perfection in a few days and
disappearing. Crops of differ-
ent ages are usually found
intermingled. There is how-
ever about four or five per cent
of cases in which no rash

appears. Also cases where very few spots present themselves. The spots are seldom found on the face or extremities and are found in greatest quantity on the body. That is the lower part, the abdomen Pain and tenderness now become manifest in the right iliac region, and on auscultation a gurgling is readily detectable, The abdomen now becomes more or less tumid the bowels very loose discharging the characteristic pea soup stools
The patient may now go

on to recovery, or gradually pass into the Typhoid state, characterized by delerium, often of a most violent form. The temperature still remains high, tongue furrowed and increased prostration, complaints are no longer heard, and bed sores tend to form. Blood appears in the fecal evacuations and if the case be going on unfavorably involuntary evacuations occur. Tremors, Subsultus, Etc come on. The delerium passes into coma and the patient

goes to that bourne from whence no traveller ever returneth. If however the tendency is towards recovery convalescence usually begins in the course of the third week. The change as a rule comes on gradually. the temperature falls the cerebral symptoms disappear. the appetite reappears and strength begins to return. The cheeks often flush as after meals. Copious sweats sometimes come on. and Sudamina appear. The fever is always of a remittent type reaching its minimum

between seven and twelve P.M, and attaining its minimum about six to eight A.M. The temperature rises to about 104° to 106° before it begins to fall. Pneumonia causes it to run higher. while hemorrhage or collapse causes it to fall. Relapses often occur after the patient is apparently convalescent. Sometimes with all the other symptoms including the rash. The temperature in a relapse usually goes suddenly up to 103° or 104°. The second attacks seldom last as long as the original one. Death seldom occurs except from exhaustion. Bowel

Morbid Anatomy. The parts most affected are the agminated glands or Peyer's patches. They may be found red, thickened or softened and later on, perforation may be found. The ulcers heal by granulation. The mesenteric glands too are usually involved. Some of the muscles in protracted cases have been found to undergo degeneration

Diagnosis. From Typhus by Epistaxis Diarrhoea and Tympanites Progress slow. Rash lenticular and rose colored. From Remittent. By absence of remitting and yellowness of skin

Prognosis. The death rate varies greatly under different circumstances. The possibility

perforation necessitates a guarded opinion in all individual cases. Hemorrhage from the bowels is an unfavorable sign as it shows that the bowel is so far involved as to make perforation probable, and in weak subjects presages exhaustion

Treatment Enteric being a self limited disease it useless for us to try to abort it. Some even give such little medicine that they may be said to almost depend on hygiene alone. This is decidedly open to criticism in most cases. If the bowels are constipated at first it is proper to give a laxative. But it is best not to

repeat this. Liquid food should be given from the first, and when the patient sleeps much should be waked up to take the required nourishment at proper intervals. But few cases need stimulation before the second week. A mild alcoholic stimulant at first as wine or wine whey. then probably as they become weaker stronger ones should be resorted to, as whiskey, brandy etc. Diarrhoea may be stopped by any suitable remedy as Opium Lead or Tannic acid. Hemorrhage must be met also by astringents. Great tenderness is often relieved by warm fomentations. When dryness of tongue with

abdominal symptoms persist our best remedy is Turpentine. Though some prefer Creosote, Verg. Nit etc Strict attention should be paid to the bladder to prevent retention. After the critical stage has passed tonics are indicated, Quinia and Iron being the best. The simple bitters are also used. Bedsores may form unless great care is taken. Change of position should be often affected. Stimulating washes used etc. When however they do form treat them as ulcers, with cerates, lime water, poultices etc. according to their condition

An

Inaugural Dissertation

On

"Specific Remedies."

Submitted to the Examination

of the

Provost, Regents and Faculty of Physic,

of the

University of Maryland.

For the Degree

of

Doctor of Medicine,

by

J. Wesley Leonard, M.D.

1852.

The number of remedial agents placed in the hands of the modern practioner is gradually and constantly increasing, and it will continue till dawning of that long dreamed of day when the "Divine Art," will have reached perfection; then and not till then will the search after new remedies cease.

Almost from the time when disease first entered, the world poor suffering frail humanity has been attempted to discover a certain remedy a sure cure. A specific for the sting inflicted by each fang of the unconquered hydra. And many have been the remedies whose virtues were extolled as healing certain of all diseases that the human family is heir to. The at-

tempts at discoveries have not been strictly confined to "Those who are to the manor born," but all classes, from the untutored medicine man of our aborigines to the retired clergymen of modern news paper notoriety have been vainly searching for specifics.

The fact that almost all the patent nostrum of the present day purport to be specifics for long lists of diseases, has induced us to take specific remedies as the subject of our inaugural thesis. And as we in our weakness will here in attempt to discuss. But had we the erudition and dexterity of our profs, we might treat this subject with

Greater success. A specific in the sense we take it is defined by Webster as - "A remedy which infallibly cures all cases of certain diseases, to which it is deemed appropriate." And according to Dunglison it is "A substance to which is attributed the property of removing one disease rather than another." Now according to either of these authorities we at once conclude that it is very doubtful if any such remedy or substance exists inside Nature wide dominion; And yet in the minds of many who profess mean share of erudition the idea prevails that there is a remedy whose action is always certain, which they pretend to have found suitable alike to each

Case or form of disease yet on the list. Indeed, so wide sped is this vague belief in a more vague theory that with the last half a century a new School of Medicine has sprung up, Phoenix, like (or professedly so) from the Ashes of all other Schools, past and present, whose aim appears to be to glean from among all the known and unknown remedies, a limited, "Materica Medica", specific in its character and consequently to tell by its action whether a disease be Curable or not, and as soon as Homoeopathy does this then we may hope for something good from this "Ignisfatuus light."

If all mankind were of like Constitution, and each disease

would run a similar course; but since such is not the case, we are left to hope for nothing so much as for the speedy dissolving of this fickle flame into air; into thin air.

The more advancement we make in medical lore the more firm do our convictions become, that our science is a study for a life time and not a simple art to be acq. through a pretended knowledge of the fabulous powers! But of the few concentrated remedies all the past experience of the learned and wise can be looked on as in vain, but a rehearsal in time upon time of the great truth that all diseases must be treated on general principles

Common, to those, of each particular class with occasional exhibition of such remedies as may be indicated, by the peculiarity of the case before us.

Even in the hands of the most scientific, our most reliable remedies fail and fail often, and that too often for the correct diagnostician and instead of being bound down to a limited list of remedies it is far better to have at our command, free from the interdiction of any leaders, all the known remedies and have the privilege of using them skilfully and scientifically when we in our judgment think best.

We as practioners should avoid the restrictions of any new born ishnes, and when we come to administer our remedies, learn to look on no one of them as a specific. But on the principles of a pure science give the drug indicated with the declaration ever ringing in our ears that

"No pent up remedy confines our powers but the whole boundless universe is ours." The truly scientific physician never allows himself to be led by the principal theories of others but being supplied with a well of thought of his own from which we may draw theories of our own that may be carried out in practice

well formed, in common sense.

The more we see of attempts to specific practice, the more do we become convinced, that in the whole list of known remedies we have no one whose action can be depended on in all cases and but few, that act with anything like certainty in any case.

Quinine has come to be looked upon as almost a specific remedy in the treatment for intermittent fever which is caused in a specific manner, and yet, to our regret how often does it fail, caused in a specific manner and yet no specific remedy. And this characteristic is quite as true as there is a sci-

ence.

As it is impossible for a donkey to be fouled by a horse, so is it just as impossible for a man to have scarlet fever produced by the virus of Typhoid fever, said Prof. Green. And so is it with specific remedies for each symptom indicates its own remedy. And must administer it according to our own judgment, and according to the symptoms and nature of the disease before us.

It is therefore superfluous to try to show at any time that there are such remedies as specifics. The doctrine of specificness would arise as a necessary consequence

from the hypothesis of an Empiric, from which the public get all the so called specifics. And from the specificness of these remedies we reach a natural conclusion that there never was a specific and will there ever be so long as the Profession exists.

That some members of our profession think that inasmuch as Syphilis fever is a disease which is generated by a specific poison, the supposition is that a specific antidote might exist, and the compounds sent for the same, are not as absurd as people thought them during—

that period when all therapeutic wisdom was supposed to have culminated in the expectant plan of treatment.

The fact that other specific diseases, such as syphilis and those of malarial origin, are cured by specific means, and that furthermore many parasites are killed in the same way justifies the hope that further search and investigation might succeed in discovering specific remedies for given diseases.

But we certainly have a right to demand that in this search for specifics, as well as in all scientific investigation done, our

tion and good judgment be used.

The opposite of this has so often been the case, so many articles have been heralded as specifics, because some one had treated a few patients with them, who did not happen to die, that every claim of the kind is received with a certain degree of justifiable skepticism.

Most of the means that have been recommended as sure cures for certain diseases hardly retain a historical interest. Thus venesection, with which it was thought or long believed that Typhoid Fever could be cut short — is now hardly ever employed. Yea, I dare say never. (employed)

The same is true of emetics. No educated physician, now-a-days in typhoid fever expects a cure from the use of Clorine water or the mineral acids. Nither Sulphate of Magnesia nor Carbolic acid have given any uniformly successful results. The fever cannot be aborted by the use of Quinine and digitalis, as was claimed in France nor by Quinine alone, even when given in very large and frequent doses. The admirable investigations of Dr. Bing, did well-nigh establish the claim of Quinine to be a specific in all infectious diseases (except malarial diseases) however, it appears that this infec-

ence if indeed it does exist, cannot be obtained short of doses that may not be used with the human family. Dr. Jacob Gray, My preceptor said that his own experience at least, after treating more than two hundred cases with quinine in doses that would formerly have been considered as dangerous to life, gives no result that would indicate any specific influence of such treatment over typhoid fever, nor any power to cut the fever short at any stage. The same thing may be said with regard to many other forms for treating the disease.

At the same time quinine digitalis and the abstraction of

heat; and cold baths, are among the most important antipyretic agencies, and are positively indispensable to the effective treatment of the fever, but no one specific.

The treatment of this disease by Iodide of Potassium has been repeatedly advocated by Sauer since the year 1840. And other physicians, here and there, tried a similar method, but on the whole his recommendations seem to have attracted the attention of the profession but little.

Calomel in large doses used to be given in fevers chiefly because a vigorous antiphlogistic was supposed to be needed in the

of what was considered the inflammatory character of the inflammatory trouble, Not fifty years ago physicians used to give doses of a scruple repeated daily and thought that in this way the drug would shorten the disease and act as a specific; sometimes it does appear that the use of Calomel materially shortens the duration of the disease and diminished its intensity in a large number of cases.

But still fails to act as a specific remedy and are therefore often disappointed with these administrations. Some of the preparations of potassa are-

often successfully used in the treatment of Feed Membranous Croup, but they can not be depended on.

Venesection was considered by our profession not thirty years ago as a specific in acute congestion of the lungs when aeration of the blood is seriously impeded; when there are extensive stasis on the venous side, and ischaemia on the arterial side of the systemic circulation.

In the apoplectiform variety of acute cerebral congestion, damage to the brain may be prevented by blood letting by relieving the strain on cerebral vessels.

In pulmonary hemorrhage—

when dependent on acute congestion of the lungs may be arrested by blood letting.

The pain of acute pleurisy and acute peritonitis can be quickly relieved by this method.

Although it is undeniable that the result above mentioned may be obtained from general bleeding — but does not act as a specific for often we see it fail and that to often for the scientific physician.

Dr. J. McSherry says that nitrite of amyl acts almost as a specific by inhalation in angina pectoris and recommends the drug when ever there are any-

indications of an attack.
Balsam Copaiba and Cubebs are known to many as the remedy for Gonorrhoea — with frequent failure.

Sulphur in skin diseases are generally certain to relieve, but the action is far from specific.

Mercury may be regarded as a specific in syphilis. The reaction which set in against its use a few years ago has certainly led to important modifications in the mode and quantity in which mercury should be given; but the fact has been conclusively established that mercury in a certain sense is antidotal to syphilis. For it arrests the —

proliferation of the syphilitic virus in the blood, and in this way acts in a specific manner.

Iodide of Potassium acts in a specific manner in tertiary syphilis — in skin diseases — of a syphilitic origin it generally gives relief.

Thus we might go on with all of our most reliable remedies, till in the end we would find no one of them whose action could be depended on as certain.

If such be the case with our most reliable articles where in heaven's name are our specifics? If there could be found

the most remote chance for "physical immortality," that alone might tend to give us faith in specifics. And were the animal frame not the complicated machine we see it to be we might expect specifics.

But a weakness in one or other part of the machinery throws its whole working out of action and then it dies — these complicated machines human beings must all die, and many too of curable diseases despite of all the best of known remedies specific or expectant we have in conclusion only to say that as yet no Eldorado with its fountain of youth has rewarded means most profound research.

nor are we any more exempt from the shaft of Grim visage death then was our race at the time when Eve finished her repast on forbidden fruit. All that we can hope for our loved science is that it may still tend to ease the sufferings of the sufferers and add one weak link to life's short and brittle chain, and in the moment when we come to take leaves of time may its kindly hand smooth the death pillow so that man may end his day.

Take one who calm puts his mouth off
And lay him down to pleasant dreams!

AN
INAUGURAL
DISSERTATION
ON THE

GUN SHOT WOUND
OF
GEN^L GARFIELD

SUBMITTED
TO THE
EXAMINATION
OF THE

Post Regents & Faculty of Physic
of the
UNIVERSITY OF MARYLAND
for the Degree of
Doctor of Medicine.

by

R. J. RUSSELL.

February 1882

Maryland

Gentlemen,

In compliance
with the rule of the Maryland
University, requiring an "original"
Thesis from each member of the
Graduating Class I respectfully submit
the following:— For three successive
terms I have been a constant attendant
of the lectures of each of my professors,
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

I obtained from the Lectures very much information not to be found in the books, such as detailed comments upon general statements of naked facts; and valuable suggestions in cases where the [illegible] applications were not immediately obtainable.— For example, in cases of Sunstroke in the country or by the way-side where ice was not attainable, to make applications of several folds of cloth steeped in vinegar water, the saturated cloth to be first flapped in the air, & then applied to the head at short intervals; or in cases of fracture and the absence of standard splints and bandages, to

substitute a strip from a paste board box, or a piece of shingle and "the tail of a quarantined shirt"; or in case of haemorrhage from a wounded vessel, to substitute a handkerchief, wisp of straw or piece of string and stick, in lieu of the more professional band & thumbscrew of every well appointed surgical case, and with such make-shifts, to afford relief until more orthodox means could be obtained. A case in point will serve to illustrate;— A patient of professor J. complaining of the weight of the necessary bed clothing resting on a severely sprained ankle, two segments of a hoop crossed & secured were

placed over the part, thus affording the much desired relief. - The lesson then learned I put in practice years after, on an occasion when a patient could not bear the weight of a sheet by reason of a raging boil near the umbilicus of a corpulent abdomen a little Ossa on great Pelion piled. - I might continue on this line all summer but with what claim to originality? If on the other hand I turn to any of the "ills that flesh is heir to" for the subject of my Thesis, what can I write that will not prove "a thrice told tale"? True, the language used might at least be "original",

very much so perhaps, but how could I hope to throw a ray of light on any one of the thousand subjects I might select, reviewed as they have been over & over again in the lecture room, by "my very worthy & approved good masters!" My "farthing candle" would be totally extinguished ere it reached the outer circumference of the reviewing Calcium; and, if forgetting the fate of Icarus, I attempt to soar beyond the limits of my pale, would not only get my wings scorched, but be pooh-poohed for my pains. — To fly the dangers of the one is but to strand upon the other; but since under the uncyorable rule

I must impale myself upon one or the other horn of the dilemma; I choose the sharpest that my struggles may be the sooner ended, and I therefore proceed to the consideration of the mooted question:— "Whether the Gunshot-wound of President Garfield was necessarily fatal?— But this, be it understood, inferentially from the several published histories of the case.—

A careful reading of the remarks of Dr. Bliss, published in advance of the report of the autopsy,— that signed by all the surgeons directly employed, including Dr. Hamilton & Agnew.— The report of the autopsy

at Eberon signed by Drs. Bliss, Barnes, Woodward, Reyburn & Lamb - the observations of Dr. Woodward on the pathological specimens preserved for the purpose - together with the semi official reports of Drs Weisse & Shrady who were invited by Dr. Bliss to visit Washington & examine the pathological specimens shew unmistakable "Ear marks" in support of certain theories advanced by those directly & indirectly concerned in the case prior & subsequent to the autopsy of Sept. 19th. This, together with certain discrepancies in the several reports referred to, compels me to the conclusion that many pots

in the history of the case have been intentionally witheld & others garbled. I note, en passant, that in the report given to the press immediately after the Post Mortem, it was stated that "no important vessel or organ had been found to be wounded".— In the report of Dr. Bliss, published in the "Medical Record" of Oct. 8th he writes; "the subsequent history of the case proved that the liver, kidneys, the intestines & the large vessels had escaped serious injury"— but near the close of the report he writes, that "the ball wounded in its [illegible] the Splenic Artery," (the largest of the three branches of the Celiac Axis)— the

official report partially corroborates the last statement by stating "that the fatal haemorrhage proceeded from a rent in the artery" but carefully abstains from positively asserting that the rent was occasioned by the ball. In the advanced report of Dr Bliss, published in the Medical Journal of Cal. Ct. he states: "that the track of the ball prescribed a course downward & forward to the point of impingement upon the 11th rib, & was there deflected to the left at almost a right angle,— passed behind the right kidney perforating the inter-vertebral cartilage & first lumbar vertebra

anterior & to the left of the kidney.—
It will be observed, no mention is
made of the 13th rib; its existence,
so far as concerns the track of the
ball, is wholly ignored. The official
report states in this connection: "It
was found that from the point at
which it had fractured the right
11th rib 3½ inches to the right of the
vertebral spines (Dr. Bliss says 4 in
from the Median Line) the missile
had gone to the left obliquely forward,
passing through the body of the 1st Lumbar
vertebra." It seems to me "a complete
& technical report signed by all the
gentlemen associated with me" Bliss
should have tracked the ball from

me important point involved to the other, stating the impingements & deflections as they presented themselves in regular succession. Not so however; more than two thirds of a column of the report is consumed in noting the morbid appearance of the tissues, — the 13th rib removed without a word of comment, & the point of emergence of the ball reached & commented upon. The report then goes back, as it were, to note, "that it was further found that the right 13th rib was fractured at a point 1¼ inch to the right of the transverse process of the 12th Dorsal vertebra" but in a manner so dis-

-connected as to leave the impression that it was made either upon compulsion, or, to allow the reader to draw his own conclusions as to whether the rib in question was wounded by the bullet, or the knife during the operation of July 24th or was the result of a primary injury; for the posterior end of the incision made at that time - 2 inches from the vertebral spines, near the upper border of the 13th rib - closely corresponds with the point on the 13th rib at which the united fracture of that rib was found, as already noted, 1½ in. to the right of the transverse process of the 13th dorsal vertebra.

Why were not all the measurements

made from one point — say the median line of the spinal column".

It is further to be noted in connection with the 12th rib, that Dr. Weisse, specially invited by Dr. Bliss to examine the pathological specimens taken from the body, notes in his report: "A wiled fracture of the 13th rib," & adds: "In that portion of the track of the ball from the 11th rib to the spine, the ball grazed the anterior surface of the 13th rib producing a simple fracture." In epitomising the injuries done by the ball he writes: "1st — a compound comminuted fracture of the 11th rib — 2nd a compound fracture of the 13th rib." Under the head of a report entitled "Surgical

Anatomical Study of the Gun shot wound of President Garfield, by Fannie D. Weisse M.D." it is stated that the following seemed to have been the course of the ball, & the same was verified by actual dissections.—(If verified why seemed?): "It impinged upon the 11th rib" (the most movable of all the ribs, which it crowded to a plane anterior to that of the 13th rib." The impact of the ball, on the 11th rib, caused it to turn on its axis & from there it deflected to the left. It tracked through the connective & adipose tissue between the superior portion of the right kidney & the 13th rib, to the spinal column." I will here observe that the "complete & technical report." does not

not state the injury to the 12th rib more particularly than that it was fractured at a point 1¼in from the transverse process of the 13th dorsal vertebra. The Surgico-Anatomical Study states "the 12th rib was grazed on its anterior surface inferrably by the crowding of the 11th rib to a plane anterior to the 13th producing the simple facture mentioned; or the grazing & simple fracture may have been produced by the 11th rib turning inwards on its axis in the crowding action; & it compound fracture by the 11th rib turning on its axis outwards, or a combination of all these actions may have [illegible] the ball to track through the connection

and adipose tissue between the superior portion of the right kidney to the spinal column" without touching the 12th rib at all "you've paid your money & may take your choice". & Mr. Max Cohen's "Artistic drawings" sandwiched between the official and semi-official reports will "fully illustrate & facilitate" the particular conclusion the reader may wish to draw.— The "complete & technical" report states "that the ball entered the 10th intercostal space 3½ in. to the right of the vertebral spines, fracturing the 11th rib 3½ in from the same point". This would make the ball directly forward & a little downward, seemingly to enable the

surgeon Wales to introduce his finger to its full extent - "as" Dr. Hamilton writes he (Hamilton) "was assured had been done") and to discover that the ball had penetrated the substance of the liver, the structure of which he recognised by the "granular feel," as also to enable Dr. Bliss to introduce a probe 3 in. which seemed to have passed in the same direction." But the autopsy demonstrated that that door was closed to the finger of Dr. Wales & the probe of Dr. Bliss, & that the "well defined field of dulness over the wound extending 7 in. antero-posteriorly & 5 in laterally" did not arise from hammerage in the substance of the liver. The question

arises here;—when it was found at 6 P.M. on the afternoon of the injury that the secretions from the kidneys & the evacuations from the bowels the next day, were free from blood or other foreign matter & "which inclined us to recede from the opinion as regards the passage of the ball through [illegible]" Why was not a close & critical examination made along the spinal column & on both sides of it "within the well defined field of dulness" would not pressure directly upon the spinous processes of the column have elicited from the patient immediately evidence of acute pain, when the exploration reached the injured vertebra. This fact elicited

might not firm pressure made with sensitive & skilfully trained fingers, have detected the ball which lay but 3½ in distant? On this point we have the authority of Dr. Gray F.R.S. who in answer to the Question "Is the Pancreas perceptible to the touch?" replies: "only under very deep pressure & very favorable circumstances such as an emaciated & empty abdomen." & Sir W. Jenner says that he has known the [illegible] of normal size in thin persons to be mistaken for disease — disease of the transverse arch of the Colon, or aneurism of the Abdominal Aorta." If the Pancreas can be felt under the above conditions could not a ball encysted near its lower [illegible] [illegible]

been felt under similar conditions: were not the pains in the back, loins scrotum & ankles suggestive of a severe shock to the spinal column, & probably injury of the ganglia & plexus of nerves located in the immediate vicinity of the 1st & 3rd Lumbar Vertebra? We have no evidence that such examinations were made on the contrary Drs. Hamilton & Agnew would appear to have confined their personal inspections to the wound itself, for Dr. Bliss writes "they individually examined the wound with great care". These examinations consisted in the introduction in different directions of probes & flexible bougies, & with the evidence developed by this personal examination, they proceeded

to discuss the probable course of the ball. Dr. Hamilton himself says on this point: "This testimony" referring to what Dr. Bliss had assured him had been done by Mrs. Garfield & himself as already noted, — "was regarded as sufficient to determine that the ball was at least beyond our reach & beyond the reach of safe exploration." Can such things be — and remain within a summer cloud without any passing wonder? The examinations & inspections which appear to have been wholly confined to probing the wound and an examination of the adjacent parts on the right of the spinal column, seem to have been due to the fact

that the first impression as to the direction of the ball, had taken such a firm hold, that even the careful examination & inspection made by the distinguished counsel (Hamilton and Agnew) "only inclined us to recede from the opinion of the passage of the ball through the liver". Conviction of the correctness of the diagnosis of the distinguished counsel," that the liver had not been wounded was subsequently forced upon them by the discovery of the pus sinus which eventually terminated in the right iliac fossa.

This fact caused a deflection of opinion

(as erratic as the deflections of the ball itself) from the passage of the missile "through the liver", to the pus sinus; this last conclusion the remarkable revelations of the "induction balance" confirmed & clinched & so it was firmly held to the bitter end. — ∴

In view of the fact that the question has been raised "whether the ball wounded the splenic artery, & the blood from it caused the rent in the adjoining adipose tissue, behind the peritoneum & above the pancreas, & which finally burst through the peritoneum into the abdominal cavity" or, whether the artery, not being in the direct track of the ball, became involved in the destruction of the adjacent tissue,

caused by contact with the pus, other than laudable, from the injured vertebra & other suppurating surfaces! compels a critical examination of the reports professing to give the direct track of the ball which involves the question raised: Two conflicting statements on this point, meet us at the very threshold of our examination and inspection of the official and semi-official reports with the purpose of learning whether the splenic artery was or was not in the direct track of the bullet. I quote:— "Behind the right kidney the dilated track of the ball was dissected into"— "the track of the bullet between the point at which it entered the 1st lumbar

vertebra was considerably dilated. The last dorsal, together with the 1st & 2d Lumbar vertebra & the 13th rib, were then removed from the body for more thorough examination. When this examination was made, it was found that the bullet had penetrated the 1st Lumbar vertebra in the upper part of the right side of its body. The aperture by which it entered involved the intervertebral cartilage next above, and was situated just below & anterior to the intervertebral foramen, from which its (the aperture's) upper margin was about ¼ in distant". The above extract is from the official report signed by Drs Bliss, Barnes, Woodward, Keyburn & Lamb. Turning now to the

report of the "Surgico-Anatomical Study of Dr. Weisse, we find the following:— Drs. Woodward & Lamb had made careful dissections of the pathological specimens by which were revealed the following conditions: "The entrance of the ball at the right side of the inter-vertebral fibro-cartilage between the 13th Dorsal and 1st Lumbar vertebra, involving the adjoining portion of the body of the 1st Lumbar vertebra, anterior to the right intervertebral foramen between the 13th Dorsal & 1st Lumbar vertebra." The question is an important one, whether the ball entered the upper part of the body of the 1st Lumbar involving the inter-fibro cartilage next above, or whether

it entered the inter fibro cartilage between the 12th Dorsal & 1st Lumbar, involving the upper border of the 1st Lumbar very slightly;— he admitting that the shock made by the ball was wholly in the body of the vertebra, as we must presume from the location of the aperture it made "just below & anterior to the vertebral foramen between the 12th dorsal & 1st Lumbar" & that the ball then passed obliquely to the left through the upper part of its body, & that the involvement of the inter fibro cartilage next above was a crack or fissure extending from the periphery of the ball into the involved cartilage, & that a line drawn through the centre

of the bullet hole so located would, when prolonged through the centre of the hole where it emerged, which to the left of the median line, have impinged upon the superior border of the pancreas, at the point at which the Splenic artery is said to have been wounded; then it follows, that a line drawn through the centre of a hole made at the right side of the intervertebral cartilage between the 12th dorsal & 1st lumbar, involving by crack or fissure the vertebra (next below) & prolonged through the same centre of emergence would cut so far below the point of impingement in the first case, as the hole in the intervertebral cartilage was

above that in the body of the vertebra.

I again repeat, that it is to be regretted that in so important a case some fixed point — as the Median Line — should not have been adopted, whenever it was practicable, for all the measurements involving the track of the ball. For, if the lateral measurements had been made from the Median Line of the Spinal Column to the centre of the hole made by the ball at the points of entrance & Emergence, together with the vertical distances from the superior border of the 1st Lumbar, or the inferior border of the 13th Dorsal, & presuming the position of the Splenic Artery to have been

normal — it would not have been a very difficult matter to have ascertained by measurement whether or not the artery was in the direct track of the ball; & the ascertainment of that fact would have been further aided, if the distance which the ball passed behind the right kidney, & the distance from its superior [illegible] had been given. In this connection I will note from the several reports, the different points from which measurements were made by each writer on the subject and which, instead of facilitating the study of the case as the purport to do, tend only to confuse.

Dr. Bliss writes, "The point of entrance

of the ball which was oval & sharply cut on the right side 4in from the Median Line of the Sternum & on a line with the 11th Rib". The official report of the P.M. states "The depressed cicatrix of the wound made by the pistol ball was recognized over the 10th intercostal space 3½ in. to the right of the vertebral Spines, it fractured the right 11th rib 3½ in from the vertical Spines". We are not told, be it noted, from what particular Spine the measurement is made, nor whether the injury was above, below or on a line drawn through the point of fracture from any particular point of the Spinous Process. Dr. Weiss states that after the autopsy the following

seemed to have been the course of the ball — "It entered opposite the 10th intercostal space 4in to the right of the Median Line." In this report we are not informed at what distance from the Median Line, the transverse process of the 12th dorsal vertebra or the vertebral spines, any of the fractures & points of impingements were made by the ball. — It is fully up to the mark in technicalities, but in other respects "it seems indeed" —

Dr. Shrady writes. "It is well established by the Autopsy that the ball entered 4in to the right of the Median Line of the spinal column" — It appears that Dr. Bliss, Weisse & Shrady are

agreed as to the point of entrance — 4 in from the Median Line — but at variance with the official Report of the P.M. Examination, both as regards the point of entrance and the impingement upon the 11th rib. The variance as to the actual point of impingement upon the Spinal Column has already been noted. The silence of all the writers quoted as to the measurements by which the declination of the ball could be even approximately ascertained when taken in connection with the fact that the "artistic drawings" of Mr Cohen of N.Y. "who came at my request to Washington for the purpose of making

accurate diagrams" are without the scale upon which they are based & which prevents their accuracy being tested, leaves the impression that the important omissions referred to were purposely made to obstruct rather than to facilitate the study of the case. Of the ball, as stated in the official report, entered the upper part of the right side of the body of the 4th Lumbar vertebra & passed obliquely to the left & forwards (and downwards be it noted) & emerged by an aperture, the centre of which was about ½ in. to the left of the median line on the anterior lateral face of the body involving the intervertebral cartilage next above, then

it follows, that the course of the ball must have been nearly horizontally forward. On the other hand if the ball entered the intervertebral cartilage between the Ic dorsal & Ic Lumbar ½ in anterior to the inter-vertebral foramen & passed through the upper part of the body of the latter & emerged through the same aperture on the antero lateral face of the latter ½ in the the left of the Median line, thus giving it a direction obliquely forward & downward, & if the Splenic Artery was in the direction of this line, & was wounded as Dr. Shrady has been kind enough to inform us, on its superior & posterior aspect, is it not singular that the

Splenic vein, larger than the artery located below it & both running in a deep groove along the superior border of the Pancreas was not involved in the injury to the artery; & that the Pancreas itself should have escaped without even a grazes from the ball in its transit across the posterior face of that organ? The inference that the splenic artery was not in a direct line of the ball, - following the obscurely defined lines of direction given - seems partially sustained at least by the report of Dr. Shrady, who whilst admitting the fact of the wounding finds no escape but in witholding the distance from the

Median Line at which the ball entered the right side of the intervertebral cartilage of the 1st Lumbar vertebra; by throwing the track of the ball forward after its emergence on the antero lateral face of the vertebra, ½ inch from the Median Line. The track of the ball after being deflected from the 13th rib must necessarily have been obliquely forward to have struck the 1st Lumbar on its right postero-lateral face & have emerged on its left antero-lateral face. For can we presume that the track of the missile was thrown forward of this line of direction after its emergence through the body of the vertebra into the "connective & adipose tissue between the left kidney

posteriorly & to the left of the Pancreas anteriorly," any more than we can reconcile a ball, having passed through a cake of hard soap, would be deflected to the right or left, upward or downward, on entering a cake of soft soap.- I do not infer that the splenic artery was not in the direct course of the ball, from the fact that (the official report) Even after a "more thorough examination & dissection than was given at the Autopsy," at which it was asserted that it was one of the pancreatic arteries which was wounded, the official report makes no mention of the injury to the Splenic Artery in describing the transit of the ball behind the Pancreas to the point where

it was found, until two thirds of a column of the report have first been taken up in describing the Cyst, the obliterated track of the ball & the appearance of the surrounding tissues, & then in the same loose rayd disconnected manner which marks the description of the track of the ball from its impingement upon the 11th rib to the 1st lumbar vertebra, it tells us, that it was found that the fatal haemorrhage proceeded from a rent nearly 4/5 of an inch long in the main trunk of the Splenic artery 3/4 inches from the Coeliac axis; but does not say that this rent was made by the ball — it is left to the inference of the reader as it was with regard to the

fractured, 3rd rib. The injury to the artery is stated in a general way as being 3½ in. from the Coeliac axis. The length of the cut is minutely particularized, but not whether it was vertical, horizontal or oblique, or whether on its superior or inferior face. We are indebted to the report of Dr. Weisse for the statement that the "seeming course of the ball, as verified by actual dissections" was that it "crossed the posterior surface of the Pancreas obliquely to the left & from above downward, wounding the Splenic artery in its transit across the Pancreas" & and to Dr. Shrady's report that the "opening in the Splenic artery was on the superior & posterior aspect of its fortunate sound." But all the reports

carefully withhold whether the rent in the artery corresponded with the line of direction of the ball. — "Its edges" continues Dr. Shrady "were sharply defined but were gradually bevelled (very considerably he might have added), to be incorporated with the walls attached to the blood sac". "This condition" he reasons, "would indicate that the coats of the artery were cut completely through during the transit of the ball & were not merely graced & afterwards opened by ulceration!" — The official report states in connection with the rent "that it must have occured at least several days before death". — Is it not fairly presumable that if the rent must have occured several days before death, it did not occur

during the transit of the ball on the 2nd of July? And in view of the severe criticisms professional & lay, of the diagnosis & treatment (and) which put in issue the professional reputation of the surgeons who were directly & indirectly connected with the case, is it not also presumable, that if the facts revealed at the autopsy had warranted the statement, that the artery in question had been injured by the ball in its transit across the Pancreas, it would have been given in a manner so pronounced as not to have left "a loop to hinge a doubt upon". From the fact that no unqualified statement to that effect is made in the official histories of the case, as well as the apparent

desire to harmonize conflicting statements & opinions, not so much by what has been said, as by what is left unsaid, leads me to the conclusion that the splenic artery was not wounded by the ball, but was the result of ulceration & decomposition which involved the adipose tissue behind the peritoneum & above the Pancreas. If therefore no important vessel or organ was wounded by the ball, we have the question — should a tortuous flesh wound, complicated with a fractured rib or two & a lesion of the spinal column have necessarily proved fatal? the patient being admitted to have been in comparatively robust health at the time of receiving the injury of temperate habits & great powers of endurance.

and when Natures efforts were seconded by proper treatment - the recuperative powers promptly responded as disclosed by the Post Mortem in "the existence of a united fracture of the right 12th rib." (admitting it to have been fractured by the ball), & the statement of Dr. Shrady that he was assured that the compound comminuted fracture of the 11th rib had also firmly united. - If the reparative processes mentioned - together with that over the entrance of the wound in the 10th right intercostal space may be fairly attributed to the incisions made in the vicinity, permitting a free discharge of decomposing pus & other irritating substances may we not also reasonably

presume, that if pressure upon the spinous processes and the part adjacent on the left side of the spinal column as suggested had disclosed the track of the ball through the column, that that fact would have suggested the probable existence of pus & splinters of bone, for which like means of relief would have been adopted, followed presumably by like curative & reparative results as those which attended the incisions on the right side. With the established fact that despite the existence of extravasated blood & the irritating surface of bone on the left side of the spinal column, the healing process was active, as evidenced by

by the encysted ball & the "total obliteration of the track of the bullet about one inch behind the Pancreas." Is it not then presumable that with proper drainage no serious lesion nor destruction of vessels or organs would have occured — consequently no fatal hæmorrhage from the splenic artery? — But I have already filled more than my allotted space, & doubtless long since exhausted your patience; I therefore respectfully leave the subject in your hands, with all confidence that if my diagnosis is correct, that your prognosis will conduct it to a successful termination, and in this I cannot be regarded as more

naïf than d'Italies who, in conclusion of his history of the case, writes that he believes that the medical professions will learn such that "the prognosis was correct if the diagnosis had been also correct."—

Thesis

Respectfully Submitted
to
Medical Faculty of
University of Maryland.
by

J. Mason Hundley

Opium & Source of its Various preparations --

(Although Opium was known to the Greeks it was not Commonly used until the fourteenth Century --

Opium is the concrete juice of the unripe capsules of Papaver somniferum. The poppy is a native of Persia, but is cultivated in Asia. Europe & the United States. It is an annual plant and grows to the height of two to four feet, the flowers are large. There are two varieties of this species, the black poppy, with reddish flowers brown seed and globular capsules; and the white

poppy, with white flowers and seed and oval capsules, but under cultivation these varieties run into each other.

The juice is gathered after the petals have fallen and the capsule is still unripe, vertical incisions are made, but not sufficiently deep to penetrate the interior of the capsule. This is done in the afternoon and on the following morning the juice will have changed from a white to a brown color, when it is ready to be gathered. This is done by the careful use of a knife; the opium is

prevented from sticking to the knife by moistening it in water from time to time. Sometimes Oil is used instead. This juice is now put into taffy pans and made into cakes of convenient size.

Adulterations &c the drug. — The most important is moisture, and that and portions of the plant is also used. Sometimes the percentage of morphia is very small, in such a case we might test the juice for artificial extraction. Opium should contain about 10% of morphia

though there is one some varieties that contain more; the quantity of the alkaloid depends much upon the soil and climate. All the alkaloids exist in the opium as meconates.

Of the many preparations of opium Morphia heads the list in a therapeutical sense. It was not discovered until the year 1816 by Sertuner. I might enumerate many other intermediate alkaloids of opium, which were at the time of their discovery

put forth as possessing some
special virtue, &c. As producing
a narcotic or deleterious effect
without leaving the patient
with those most unpleasant
sequelae, the most important
of which, are headache,
confusion of mind, vertigo,
which is increased on
assuming the erect posture.
also vomiting and constipation.
Of course all of the above
symptoms are not attendant,
necessarily upon the admin-
istration of Opium or Morphia,
but it is extremely seldom
where it is administered

in full medicinal doses that we do not find headache, stupor & constipation. It was once asserted that Narcotina was the alkaloid to which was due the after distressing effects, be this true or not. We all know that Dead Ly Opii acts splendidly as a general thing, or at least much more pleasantly than the other preparations of opium. What can this be due to? It is only one thing in my judgement & that is the abstraction of the Narcotina by Washing

the preparation with Ether

Codea although comparatively a new preparation is now quite extensively used; it is one fourth the strength of Morphia and is very mild in its action; it is used principally to allay nervous irritability, also very valuable in irritable coughs -- Pulv opii et Ipecac is one of the most universally used preparations of opium; it well deserves its popularity having a two fold action (Anodyne & diaphoretic) it is especially serviceable in the formative stage

of colds, characterized by a chilly sensation & a stuffiness about the nose -- Apomorphia an indirect alkaloid of opium is entirely different in its action from any of its kindred salts; instead of being a calmative and soothing agent, it produces the most intense vomiting and sometimes syncope; in large doses it will paralyze the center of emesis. Unlike Ipecac, antimony and other nauseant emetics, it acts through the center of emesis.

As the preparations of opium are familiar to every one it will be useless to occupy time in enumer-

ating the remainder of these

Treatment of Opium poison.

If we see the patient shortly after taking the drug, it is best to give a very active Emetic, if conscious & will swallow, we may give Sulph Zinc, Sulph Copper or Mustard & water if we have not the above salts. If unable to swallow we might use Apomorphia subcutaneously, tho' it is very depressing and it is a question if it should be done, the stomach pump is invaluable, provided the Opium be in solution. Cold applied to head and

head. Artificial respiration, and flagellation should all be brought into play, the faradic current is of value applied over the chest muscles, it causes a reflex irritation of the respiratory center. Belladonna is the antidote for opium poison, it stimulates the vaso motor ganglia of the heart & body, thereby causing a contraction of the arterioles, which produces an increased blood pressure, and therefore a rise of temperature. Belladonna also increases the respiratory movements,

the number and depth, but not in the same ratio as that of the pulse -- Opium dilates the arterioles & veins, causing a passive congestion. We should be very careful in employing belladonna for too long a time, or in too large doses, if it is not used judiciously we paralyze the vaso motor nerves and bring about the very state of things, for which it was given to relieve). The very smallest quantity which will raise the arterial tension. Aconite the rapid

ration. dilate the pupil and
reestablish reflex excitability
should only be used. I
believe it is the case, for
too frequent, that patients
die from Belladonna narcosis
& not Opium; when treated
for Opium poison by those
who do not appreciate or know
the physiological action
of the drug. It is a mistaken idea
which some entertain, that by
the use of belladonna
the patient can be
restored at once to complete
consciousness, but all we
should wish for is to see

the skin redden and the breathing becomes more and more deep, it does not make any difference whether the pupil be dilated or no, if the above state of things exist - maintain the above state of things & give time for the elimination of the drug & your patient will recover The best way to administer the antidote, is the alkaloid Atropia in 1/120 gr. every fifteen minutes till three doses have been given, wait a while if the cardiac movements & respiration

are not increased, we should
administer more, but very
carefully.
Physiological action of Opium.
We should remember in administering
Opium that often in small doses
we can get the desired effect
& leave the patient without
stupor, nausea & constipation,
which usually follow the use
of larger doses. One theory is
that Opium in small doses
produces sleep by acting on the
Vaso motor system, thereby causing
diminished flow of blood to the
brain, which is natural during
sleep. Large doses paralyze

the vaso motor nerves causing a hyperaemia. It is more than probable that Opium acts directly upon the vessels of the brain — After taking a small dose of Opium, the mouth becomes dry. voice husky & diminished taste, this dryness is succeeded by a vitiated secretion, the secretion of all the glandular apparatus of the Gastro intestenal tract is lessened, which gives rise to thirst. the appetite is impaired probably by lessened oxidation. the action of the heart is increased & the pulse is accelerated

all sense of fatigue vanishes
the face becomes flushed, the
pupil contracted and the
Eye more brilliant. now
the ideas flow more rapidly
but less sustained. the above
state of things only lasts for
a short while. when sleep
of a refreshing character
follows.
In full doses. the stage of
excitement lasts but a short
period. the heart pulsations soon
diminish in number & force
and the respiration becomes
more shallow. the mouth
becomes very dry and a sense

of nausea & vomit). then comes on deep sleep - the pupil contracted, slow & relaxed pulse, sighing respiration and moist skin - in some persons produces itching -

Physiological action of Morphia there is a very slight difference from that of opium. It causes more nausea - intense itching - in some cases increases the amount of urine - Morphia produces more nausea when given by hypodermatic injection than by stomach this may be overcome to a great extent by combining atropia with it - Benzoic acid

one grain to the ounce of morphia and atropia solution, is recommended by Roy Chew to prevent the formation of penicilia ...

"Medical use of Opium"

In administering Opium we should always remember the extremes of age. Children are very susceptible to opium in any form. Cases are recorded of the death of infants from nursing their mother who was taking Opium - The ages are easily influenced by it. so we should in either case be very particular.

The paroxysm of an intermittent attack may be

deferred & lessened by dose of Morphia
it is best to combine with it
Tinct - In some of the
stages of Typhoid fever Opium is
of very great value. ie - In
perforation, by keeping bowels
quiet & allay pain. Some-
times the diarrhoea cannot be
checked by anything but Opium.
Very small doses of Morphia
is invaluable in the low muttering
delirium. twitching of muscles
& vigilant coma of the fever.

Opium is of value in the
treatment of Peritonitis. Pleu-
risy & Meningitis - it relieves
the pain - tones up the blood -

vessels and prevents the migration of White blood corpuscles -
In Pneumonia opium is only valuable in the first stage in combination with Tinctura Sulphur.
Of value in Dysentery. always give a dose of Sulph Magnesia Every 2 or 3 hours till we see a mucus discharge. then use the opium - For cholera Morbus use hypodermic injection of Morphia not over 1/6 grain at once -
For Colic. hypodermic injection of Morphia first - then give 3j doses Fld Ext Senna; the morphia will not interfere with the action of the Senna

but rather aid its action
Morphia is of special value
in traumatic Tetanus and
Uraemic Convulsions, in
this latter trouble Chloroform
may relieve the pain but
not the cause. Morphia is
best to use as it relieves the
reflex action on the brain.
There are almost an endless
number of troubles to which
Morphia & Opium are applicable
but I deem it useless to mention
more ---
In writing this paper I have
advanced no theory of my own
but have endeavored to use

only plain practical facts.

Respectfully submitted

J. Mason Hundley

Montagues

Essex Co Va

February 10th 1882 ...

To the Dean and Faculty
University of Md.

as. D C Pitt
Virginia

Thesis on Fractures

A fracture may be defined as a breach of continuity in the substance of a bone a fracture usually results from some direct violence as from a blow or it may be produced indirectly as under some bending force the bone giving at its weakest point in the line of extension when the bone alone is broken it is said to be a simple fracture, when a wound exists communicating with the broken bone whether it be caused directly by the same force that produced the fracture or indirectly by the bone perforating the skin the fracture is compound a simple or compound fracture is said to be complete

When the solution of continuity is complete: incomplete when the bone is only cracked fishured or bent as in "greenstick fracture. when the bone is fractured on its convex surface and not on its concave. Splintered when only a portion of the bone is cut off; fishured when the line of extension extends partially or wholly through the bone and no separation of the fragments exist. impacted when one end is driven into and fixed in the other. A perforated fracture may be produced as by a gun shot or punctured wound: comminuted when the bone is broken or ground into fragments. Complicated when the important blood vessels nerves and large joints are involved; epiphysial fractures are

those in which separation of the epiphysis from the shaft of the bone occurs, but it is rarely met with after adolescence as ossification usually takes place from at that time. Fractures are also classified as to their direction being transverse, longitudinal or oblique according to the direction of the force and the position of the limb at the time of receiving the fracture. A direct force usually producing a transverse fracture as in the passage of a wheel over a limb, a fall as in jumping from a roof usually breaking an oblique fracture, longitudinal fracture is usually the result of a gun shot wound

splintering the bone and generally extending to the joint above or below and when of a compound nature requiring immediate amputation or resection. The presence of a fracture can under ordinary circumstances be readily determined by the following diagnostic signs: preter natural mobility Crepitus and deformity attended with pain swelling and usually shortening of the limb remedied by extension. Preternatural mobility results from the loss of support afforded by the bone allowing unnatural movement of the limb. Crepitus results from the grating together of the fractured ends

and is a certain diagnostic sign when it can be elicited, but care must be taken not to mistake it for the crepitus of effusion or the theca of tendons the one being soft while that of bone is hard. deformity is principally the result of muscular action and it becomes an important point in the treatment to know and appreciate the certain sets of muscles involved in producing the deformity and displacement of bone which may occur either laterally longitudinally or in a rotary direction, swelling when following immediately upon the accident is the result of a ruptured blood vessel

but when it occurs in the course of
a few hours or longer is due to inflam-
matory effusion. The prognosis in
fractures when of simple character
is as a rule good, but in a compound
fracture it is always of a more serious
nature, death occurring according
to statistics of Ouyo [illegible] in
17 per cent in compound fractures of
the [illegible] and [illegible], 27 per cent in
compound fractures of the leg and
[illegible] per cent in compound fractures
of the thigh, death occurring as a
rule from shock, fatty [illegible],
hemorrhage, septicemia, super-
[illegible] of [illegible] gangrene [illegible]
treatment of fracture [illegible]

a broken limb to its normal position and retain it in place is the object of treatment and though simple in principle is often of the greatest difficulty in practice and at times requires the highest degree of surgical skill and ingenuity of art to accomplish. the seat of the fracture should be accurately determined the line of its direction and the tendency to displacement. and when satisfactorily ascertained an effort should be made to reduce or set as soon as possible which is accomplished by the continued force of extension and counterextention gradually and continuously applied and never in violent jerks.

muscular relaxation being brought about if necessary by the inhalation of Chloroform, Ether, or other relaxing agents which greatly facilitate the reduction and proper coaptation or setting of the limb — the greatest gentleness being observed and not in any further injure the soft tissues, nerves, or blood vessels in the manipulation of the broken ends, when the fracture has been reduced, and by proper coaptation or "set" thereof the mechanical appliances are necessary to keep the bones in position, and the simpler these appliances are the better so long as they fulfill their purpose. — Splints are composed of

Various substances as wood, metal straw, gutta percha, plaster of paris &c. splints should always be well padded and the pads so adjusted as to fill into the inequalities of the limb and protect it from any local pressure - they should be firmly and immovably fixed to the limb by adhesive straps or bandages and the seat of fracture, as a rule, should be left exposed for daily examination in order that the fracture be readjusted if displacement should occur - Potts rule that the splint should include the joint above as well as below the fracture if round though it cannot always

be followed" but every joint should be fixed when by its action the broken bone is rendered movable for after setting the limb the essential point to be observed in the treatment is immobility and thereby perfect rest. Continued extension by means of weights, pulleys or other appliances is a valuable and necessary adjunct to other treatment, lessening as it does the tendency to shortening in the fractured limb. In fractures of a compound character amputation is sometimes required as when the limb is much crushed and the large vessels and nerves injured or the large joints involved

Repair of Fractures

When the bones are maintained accurately in position or are impacted, direct union ensues as in the soft parts but when movement is allowed, reparative material is poured out around the broken fragments, and a provisional callus or ensheathing bone substance is formed, which, acting as a temporary splint, keeps the bones in position until they unite permanently, after a simple fracture some slight inflammatory exudation is usually poured out around the broken ends, which, however is usually absorbed, true reparative material not being poured

out until about the ninth or tenth day, chiefly by means of the periosteum, endosteum, though the soft parts may also assist in its secretion. The period in which the several stages of the reparative process are usually completed after fracture of a adult human bones are reckoned thus according to Cooper: to the second or third day after the injury, inflammation in and about the parts; thence to the eight or tenth day, suppuration, with subsidence of inflammation; thence to about the twentieth, production of the organizable material, and its gradual development to its future or earthy consistence; thence to the

gradual ossification — a part of the process which is most variable in both its time of commencement and its rate of progress and which is probably rarely completed before the ninth or tenth week.

Ununited Fractures

At times after a simple fracture but more commonly after a compound one, the fractured ends become inflamed and as a result the broken fragments die wholly or in part repair is retarded and cannot be perfected until the necrosed bone be cast off or removed, in compound comminuted fractures this result is more common than in less com-

union — due to a want of
that absolute immobility
of the fractured bone that
is so essential for its repair,
the important point to
be observed in the treatment
is the application of an
absolutely immovable appa-
ratus — as for instance the
plaster — a thick stiff, start-
ed gauze or [illegible] bandage,
the same [illegible] over & over
the broken bone having the
broken on the opposite [illegible]
when this means fails,
the ends of the broken
bone may be well rubbed

application but is somewhat formidable and should only be undertaken when there is no hope of [illegible] measures being successful; tonics and constitutional measures being used as indicated.

Vicious Union.

The [illegible] that follow badly united [illegible] require at times surgical treatment, and when the surgeon is consulted during the first weeks of the case, Chloroform should be given and the bone refractured and [illegible] in good position. The general rule, according to Bryant, governing

Gout

Gout, technically known by the names of Podagora, and Arthritis may be defined as a painful inflamatory disease commonly appearing by paroxysms, and affecting chiefly the smaller joints, but liable to change its seat to various more important organs.

As regards the causes of Gout it is a disease markedly hereditary in its character this being shown to some degree, in its development, at comparatively an early period of life. It seldom, if ever, occurs in children, when it does it can almost invariably be traced, to "hereditary taint" It does not follow however, that all the children of Gouty progenitors, have the disease, but they are more liable to have it than others not so predisposed.

It sometimes leaps over one generation and appears in the next and it is frequently warded off in those who are disposed to it by an active and abstemious life

From the numerous statistical accounts collected by our standard authors it appears that the greatest number of first attacks come on between the ages of thirty and forty But although the number which began in persons above forty was somewhat smaller it is evident that if averaged upon the whole number of persons actually living above that age, the proportion would be greater

Gout occurs more frequently in males than in the female sex Yet women are by no means exempt from it and in them it is more apt to occur after the cessation of the catamenia

The stout of sanguine temperament plethoric and corpulent of both sexes are more liable to it than those of opposite conformation
It is said that individuals who work in lead are decidedly prone to become Gouty, and on the other hand it should naturally infer, that Gouty people readily suffer from lead poisoning In cold and temperate climates especially in those which are at the same time damp and changeable Gout chiefly prevails
Spring is the most favorable season for the attacks and then Autumn.
But the cause which is undoubtedly the most active in the production of Gout is a luxurious life, with the free use of vinous liquors Persons who take little exercise and indulge largely in the pleasures of the

table especially in animal food and fermented drinks are the most common subjects of the disease. Among persons who are addicted to the excessive use of alcoholic liquids, it is observed, that Gout occurs much more frequently in those who consume wine and malt liquors than those who are intemperate in distilled spirits. naturally therefore the disease is developed much more frequently among the wealthy and luxurious than among the poorer and laborious classes. In the pathological point of view it is now very generally believed that the cause of Gout is the presence of an excess of uric acid in the blood, in the form of urate of soda, this substance being generated in excess, in consequence of indulgence in the habits mentioned

above, while the kidneys are incapable of excreting this excess. The origin of this excess is still open to discussion, and not a settled fact. Of the many different views entertained upon the subject I shall only advance two, which I believe are generally accepted to be the most plausible.

The view of Wealth is that uric acid being more highly oxidized than urea, deficiency of oxygenation of blood may increase the amount of uric acid in the unchanged.

Secondly, imperfect action of the kidneys may by not depurating the blood fully induce same accumulation.

I may say here that we may have some exciting causes of gout, such as slight injury to a joint, pressure, falling and exertion,

Exposure to cold and wet undue mental labor
violent depressing emotions such as rage or
grief, overeating or drinking or indulgence in
indigestible food.

Having enumerated the principal causes in the
production of Gout I shall next consider
the symptoms and signs

The most common place for the primary attack
of Gout is in the first joint or ball Metatarso
phalangeal articulation of the Great toe of
one foot. The patient in many cases without
a previous indications of illness is surprised at being awakened in the middle of
the night or a little later with intolerable
pain in that joint with much febrile heat
and restlessness commencing perhaps in a
slight chill. The toe soon becomes swollen

tense, and red. Sometimes the ankle heel or instep are similarly affected. There is very great tenderness on the slightest pressure or motion of the part. This state of things continues from six to twenty four hours, usually, after which a remission of pain takes place, with a gentle perspiration, and a tendency to sleep. The inflamed joint however continues, owing to effusion of fluid into its interior, and at length becomes oedematous and shining. On the following night the fever and pain return, and so continue to do for a week more or less, during which there is thirst want of appetite, costiveness and scanty high colored urine, depositing a red or lateritious sediment on cooling. The paroxysm lasts ordinarily from three to ten days at the end of which time the pain suddenly

terminates, as if by magic. The joint continues swollen, and ordematous, for a few days with itching and exfoliation of the cuticle, but the patient returns to his accustomed health, with perhaps an unwonted degree of vigor and alacrity. A precursory stage in most persons takes place in advance of the paroxysms. It is marked by a deranged state of the appetite and digestion, with heartburn, flatulence, nausea, acidity, signs of portal congestion & palpitation of the heart, and also nervous disturbances such as languor, headache, irritability of the temper, low spirits, cramps in the calves of the legs or other parts, disturbed sleep, sudden laryngeal congestion with difficult breathing &c. These symptoms are supposed to result from the presence of gouty poison in the blood.

In some cases the patient feels unusually well both mentally and bodily before the occurrence of an attack. Though it is often preceded by some uncomfortable local sensations in connection with the joints.

The first paroxysm of gout is termed the curtain preludes to others which are to follow after the interval of some months or years according to the predisposition and habits of life of the patient. Some persons escape with but a few paroxysms during life others have an annual visitation, whilst others are attacked once in two or three months. The frequency of the paroxysms goes on increasing until in some patients there is hardly any any suspension, unless for a few months during the summer season. The later paroxysms however are often more manageable.

but the general health is more disposed than
in the earlier attacks in the later attacks both
feet are liable to be affected in succession and
the inflamation after having left one foot may
return to it again The small joints
of the hands are also liable to the invasion
constituting the variety of Gout called Chiragra
or firmly fixed, there is scarcely any part of
the body which may not participate in the
extension of the disease Effusion generally
takes place in the synovial cavities and sur-
rounding cellular tissue When the disease be-
comes thus confirmed it is usually called
Chronic Gout this commonly follows the acute
form but in some cases may become gradually
established without it In Chronic Gout the
affected limbs are disabled from exercise

they become painful at night interrupting sleep and are moved with difficulty and caution by the patient. There is also a general breaking down of the strength and spirits, of the patient looks worn sallow and haggard the digestive powers are deranged and there is often palpitation and dispnoea besides many of the other symptoms mentioned heretofore.

When the disease has existed for a certain length of time, there appears in some persons but not in all a deposit of calcareous concretions known by the name of chalk-stones or tophi situated mostly in the cellular tissue between the outside of the joint and the skin. Sometimes however they penetrate the fibrous textures and the cavities of the joints. These concretions are fluid or semifluid when first effused but become

Gradually soled by the absorption of the fluid parts They finally become hard and friable resembling common chalk in their appearance In their fluid state they are formed of hydrated urate of soda, but the soled concretions consist mainly of urate of soda with some phosphate of lime The chalky concretions are liable to grow with the return of every paroxysm In bad cases the skin finally gives away and a chalky serous fluid is discharged, this is afterwards replaced by a kind of chalky pus, and in this manner a part of the chalk escapes, but never the whole owing to its entanglement in the cells and textures Persons have been known to write their names with the exuded chalk protruding from their knuckles.

Sometimes the apparatus close over and crystallize but are liable to break out again during subsequent paroxysms Chalk-stones are most common on the hands and feet (joints) which they distort in an unsightly manner They may however appear in any part which is the seat of a gouty inflamation Persons who are subject to gout are also liable to granite complaints and to calculus both of the Kidneys and bladder The urine is not only found to contain urea and other solids in excess, but deposits of urates forms within the renal tubuli which afterwards extends into the intertubular tissue (at the extremities of the papillae and in the direction of the tubuli of the pyramids which sometimes are often seen Alternately the organs become greatly contracted and indurated at the same

time bring the seat of very extensive deposits. There are various exceptional forms under which the gouty diathesis may become apparent in the system. Sometimes the viscera become deranged without obvious affection of the joints, constituting irregular or concealed gout. Thus the digestive apparatus may be affected with [illegible] want of appetite, pain, flatulence, costiveness, or diarrhoea, acid eructations, and even vomiting. In the thorax are sometimes felt pain, dispnoea and palpitation. In the head vertigo, diminution of sight, and hearing, and headache. The spirits are very much dejected and the mind perish and irritable. Sometimes the Gouty inflamation attacks the eyes, the fauces or the urethra, and produce symptoms imitation of various diseases.

The name of retrocedent gout is applied when the disease by a sudden metastasis disappears at once from an inflamed joint and attacks some internal organ with violent and alarming symptoms The part most commonly seized is the stomach in which there is sudden pain with nausea and vomiting (retching) and great anxiety and distress The head may also be attacked with syncope and urgent dyspnoea or the Brain with symptoms of apoplexy and paralysis

Diagnosis In its diagnosis Gout is principally to be confounded with rheumatism The following circumstances will serve to distinguish them Gout is usually hereditary and affects the luxurious and indolent Rheumatism is less distinctly hereditary and occurs among

the power and hand writing shows chiefly
In rheumatism the joints are less red and
the patient does not despond. Gout is more
paroxysmal in its character and alternates
with intervals of ease more than rheumatism
The chalky deposits are characteristic of rheu-
matism Gout. the acid perspirations of rheuma-
tism. Gout affects the smaller joints principal-
ly of great toe Acute rheumatism attacks
chiefly the knees ankle and often many at a
time. These are the chief diagnostic points by
which we can generally easily distinguish the
two diseases; Yet we must remember that
cases do occur in which the distinctions are
by no means so well marked and when it
becomes difficult to make out the exact nature
of the complaint Sometimes there is a mix-

combination of the two affections is what the name rheumatic gout (Rheumatoid Arthritis) is applied.

Prognosis. In the early stages of an acute attack, the prognosis is not unfavorable, and so long as it keeps to the extremities. But the extension of the disease to the stomach, the heart or the brain and its membranes is fraught with considerable danger. It is much more unfavorable also, in proportion to the age of the patient, to the degree of hereditary predisposition, & to the frequency of the attacks. The prevalent notion that gout secures an immunity from other diseases is now generally admitted to be founded in error. The chronic form of gout undoubtedly shortens life, the most serious signs attending it are those indicating advanced renal disease with non elimination of the uric

Treatment. The treatment of a first paroxysm of gout may be expectant and palliative, for it is not certain how soon spontaneous resolution will arise, and the patient, not without reason, is taught from day to day to look for relief and restoration to health. Little therefore need be done, except to open the bowels with a brisk purgative, such a combination of Calomel and Colocynth (best in pill form) and we may apply flannel with some Camphorated oil, or some opiate Linament to the affected part which to a small degree alleviates the pain. But when the paroxysms are protracted and very painful or return with progressive severity, relief must be sought from such means as

are in our power. Many expedients have been resorted to, a large proportion of which are liable to serious objections. Immersion of the foot or affected part in cold water has afforded great relief to the pain, but is liable to drive the gout to vital organs. Blood letting has been found to mitigate the inflamatory action, but is inadmissible except in the most robust and plethoric patients. Sucking the affected joint is useful as a palliative means but even this has its limits in extremity.

The remedy which in the present Century has taken precedence of all others is Colchicum this is looked upon as the specific remedy for this affection

but due care must be exercised in giving it
if not the good will not exceed the harm of
its administration It has justly acquired
the reputation for the power of pulling almost
an immediate stop to the paroxysm
From mj x xx of the wine of colchicum
root should be administered every six or
eight hours until the paroxysm is allayed,
after which it is advisable to continue, but
the dose should be decreased and given at
longer intervals It may be given in the pow-
dered form in the dose of gr ii , but the
wine is considered most efficacious, The com-
bination of the wine with the bicarbonate o
some regulable salt of potash is highly lauded
If the medicine is good it commonly purges
in the course of twenty four hours and sometimes

produces vomiting with prostration of strength small pulse and cold perspiration. These effects give evidence of the full action of the medicine, but are not always necessary to cure of the paroxysms these nausea will disappear as soon as the drug is omitted. Colchicum also increases the solid and liquid portions of the urine, thereby promoting health and assists in eliminating the noxious materials present in excess in the system.

During the paroxysms rest of course is essential, and a free action of the skin should be kept up by the use of diaphoretic drinks or vapor of hot air baths is advantageously employed in some cases. A low diet is generally thought best a point which should be improved gradually as the

attack passes off, it may be necessary to allow weak patients a good quantity of liquid nourishment. If the patient experiences much pain and restlessness at night it is well to give a dose of Opium, in the form of Dovers powder, or a hypodermic injection of Morphia is often effectually employed for a similar purpose. As I have before mentioned the symptoms must be treated as they arise in these paroxysms.

But the mere arresting of the paroxysm does not involve the cure of the disease. The most important result requires the avoidance of the evil. The prevention of future paroxysms can only be expected from a careful and abstemious regimen; and this course, we have ample proof, will be found effectual in a

great majority of cases The avoidance of
sedentary habits and moderate daily exercise
in the open air. proper ventilation a daily bath
followed by friction wearing of warm clothing
with flannel next to the skin absence of un-
due mental labor and freedom from all
sources of worry and irritation; persons affect-
ed with Gout should avoid late hours at night
and lying in bed late in the morning if possible
residence in warm and equable climate but
if this is not practicable protection against all
sudden alterations of temperature, or exposure to wet
& cold, with a change to favorable climate dur-
ing the winter months Thus hygienic management
will be found indispensable in the treatment and pre-
vention of Gout, with combination of total abstinence
from various stimulating drinks Exercise thus does not

always succeed in confirmed Chronic Gout but preventing the returns of the acute disease it is eminently successful. And although in some cases where the blood ure & secretions have become radically changed by the arthritic diathesis, and there is little hope from any treatment, Yet in the early & some times in the advance stages of the disease, the recurring paroxysms are postponed mitigated, or totally prevented by entire abstinence from vinous, and alcoholic stimulants.

In these few pages I have endeavored so far as my limited knowledge extends to give a brief history of Gout, and its treatment, and I trust that time, and experience in future years may enable me, to more thoroughly master this important subject.

Ballard Kenzie Smith
M.D.

Thesis on
Structure of the Urethra
by
Joseph Pugh Keith
of
North Carolina
1882

Stricture of the Urethra

In the consideration of stricture the anatomy of the urethra will have to be omitted because of the space allotted in essay of this character. Stricture of urethra. By stricture we understand a narrowing of the normal calibre of the urethra. There is to be found in almost every individual a contraction at the meatus, but this should not be nominated stricture. Two varieties of this trouble are usually considered spasmodic and organic. Spasmodic stricture consists in a spasmodic contraction of the involuntary muscular fibres of the urethra & is a temporary ~~[illegible]~~ only. Organic

Stricture of the other kind

is a permanent contraction of
the canal, a band of cicatricial
tissue forming within the tunica
of the urethra. The former is usually
of little import, the latter necessary
of grave importance.

Pathology. In noticing the pathological
conditions of the urethra we observe
the portion anterior to the stricture
to be of nearly normal dimensions
sometimes however the canal is
contracted in front of the stricture.
Posterior to the contraction there is
usually to be found a dilatation
due to the impediment formed
to the free outflow of urine. This
condition is observed in the healthy

of the urethral walls which

leads to a constant enlargement behind the stricture. The pind also behind the seat of contraction, the mucous membrane in a state of chronic inflammation & the surface is generally covered with a thick, tenacious exudation. Among the most serious consequences resulting from the ravages of the malady are abscess & fistula in the neighborhood of the urethra. The abscess usually commences behind the seat of stricture & burrowing in ever varying directions. Most find its exit in some portion of the canal, thus establishing an artificial urinary duct, or it may

slough through the pressure, start
or some part of the abdominal
cavity. Changes in the mucous
are going on in the bladder, ureters
& kidneys. The walls of the bladder
become hypertrophied, & consequently
its capacity gradually decreases.
In the ureters & kidneys dilated
pouches are formed the obstructions
to the free passage of urine acting
always as a direct cause. The
kidneys thus becoming diseased become
to an alarming extent the individual
power of resistance over injuries
& current maladies that are
liable to befall him. The testicles
also participate in the irritability
of their neighbors as caused by

the fact of frequent attacks

of epididymitis.

Etiology. Spasmodic stricture is of purely a nervous character resulting from the irritation of a sentient nerve which provokes through the centre a motor impulse causing the muscular contraction. Organic stricture tells the old story on its victim of a prolonged case of gonorrhoea. One of most frequent causes being an attack of specific urethritis. Next in order to gonorrhoea we find injuries to the perineum rectum agents in producing urethral contraction, but so often is urethritis the cause that the first question the surgeon asks in Haar

you had the gonorrhoea! The
use of strong injections has also
been variously accorded & denied as
producing the disease. They probably
in rare instances exert some
effect. Symptomatology. One of
earliest & most positive signs of
stricture is a gleety discharge from
the urethra. On arising in the morning
the patient observes the tips of the
meatus glued together, and a drop or
two of tenacious mucus may ooze
from the penis during the day.
When the stricture is a little
severe in character, the linen is
stained profusely for a few days
& then disappears the discharge
almost entirely; but sexual

enjoyment or any slight bacchanal indiscretion on the part of the patient will excite the inflamation anew. Frequent micturition is another important diagnostic sign, the patient from irritability of the neck of the bladder has frequent calls at night to void the contents of that viscus. Pain in the loins, back & perineum are often present to a considerable degree and sharp urethral pain is experienced. Behind the pubes is another frequent seat of pain; but this depends on the duration of the stricture & the consequent amount of inflamation of the neck of the

bladder. Hæmaturia is also present in aggravated & sometimes in mild cases, where there is much congestion of the mucous membrane. Perhaps the most emerging symptom to the patient is the nightly visit of a stubborn & often painful erection, & the still more distressing accompaniment of a nocturnal emission. With some coction is imperfectly accomplished & the semen either absolutely does not or does not pass, or slowly trickles away. I have known a case of the former in which the patient informed me that he

felt into perineum & that his Companion confirmed his opinion. Retention of urine is another symptom, that is variously limited or severe, it may be distending the walls of the bladder, produce rupture of the same into the abdominal cavity, thus causing death by peritonitis. Occasionally rupture of the urethra occurs behind the stricture, from retention distention of the Urinal walls. Hæmorrhoids prolapsus ani, hernia etc are classed among the symptoms of urethral stricture; but when these are indirectly due to

hereditary influence or directly to the contraction is a debatable question. Diagnosis- The general symptoms alone would seem sufficient for determining the nature of the case, but they are frequently deceptive. Urethral Muralgia & Chronic inflamation of the prostate, resembles very much in their symptoms urethral contraction. In Chronic inflamation of the prostate we find the gluty discharge, pain in back and loins, frequent desires to urinate, and without a careful examination we may easily be deceived. To confirm our diagnosis

of obstruction, we are then
Compelled to resort to instru-
mental exploration of the urethra,
& for this purpose legions of
instruments have been proposed.
The most important of these are
the bulbous & accompanied
sounds, & the urethrometer devis-
ed by Prof Otis of N.Y. In
exploring the urethra with
the bulbous or accompanied
sound, we select an instrument
as large as the meatus will
admit & gently pass this
into the canal & if there be
no obstruction, it will descend
through the part without

interruption. If, however, a stricture be present, the instrument is checked in its downward passage, & on withdrawing it, the edges of the instrument impinge perceptibly against the cicatrized tissue. When examining a sensitive & high strung nervous individual you meet with a number of apparent stricture but they are merely spasmodic, & under certain circumstances will not occur. As a means to diagnosis the instrument is [illegible], it is by far the best how we use being [illegible] & capable

of measuring the capacity of a stricture, that is, you can determine the size of the sound which will enter the narrowing. It is held by Prof Otis, & accepted generally as correct, that the size of penis bears a direct relation to the calibre of the urethra. The rule given by that gentleman is to measure the flaccid penis about its middle portion, & the number of inches of the penis in circumference would be expressed in millimetres multiplied by ten, in the circumference of the urethra. Thus the penis measures 3 inches the urethra

should admit a sound 30 Nx; and 3½ in. 32½; 3½. 32 Nx & so on for every quater inch an addition of two millimetres. This rule if not strictly accurate, is of great practical value, as it determines an existing idiosyncrasy in a patient & informs us the largest instrument his urethra will admit. The largest instrument that will pass should be the first used in examining for suspected structure. With the general symptoms to guide you & your patient not actuated or [illegible]

it is impossible to make a mistake when instrumentally examining for stricture. You may sometimes be troubled with a nervous patient in the introduction of the urethrometer or sound but under the influence of chloroform the spasm & nervousness disappear & you have the way clear & unobstructed to a positive diagnosis.

Treatment. Constitutional means: The remedies directed to the constitution will of course vary with each & every individual. It will be sufficient for most patients to treat the malaise

to which they are subject, & pro-
mote to the best advantage
their general health. The kidneys
as being the greatest sufferers,
should be looked to & their duty
lessened as much as possible.
The bowels are to be kept open
& a healthy & free action of
the skin maintained. All highly
seasoned food, salt meats, [illegible]
ide, should be avoided. The most
detrimental agent however & the
one most universally so is the
use of ardent spirits, a state of
intoxication will [illegible]
extremely injurious to the patient.
But in small quantities [illegible]

glass or two a day will do
no harm when it agrees
with the general health because
it produces no turgescence of
the urethral mucous membrane.
Frequent baths especially hot,
will be of great benefit, & when
there be much irritability of
urethra, the hot hip bath is
invaluable. The miserable
patient on retiring tired &
weary, will very frequently awake
within an hour with a troublesome
& perhaps painful inction one
of the most terrible symptoms &
accompaniments of stricture. The
remedy that will always bring

relief in this trouble is the nightly bath of the pens in water of as high temperature as can be borne. When the urine is alkaline & of an irritating character the administration of suitable remedies as citrate & tartrate of potash is indicated,

Instrumental Treatment — The treatment by dilatation shall first engage our attention The principal object in this is to dilate by degrees the almost unyielding Constriction & by this means promote to some degree the absorption of the plastic deposit in and around the structure &c

instrument of as large size
as the structure will admit is
passed, once every other day being
sufficient, and allowing the sound
to remain for about two or three min-
nts. Sometimes it is advisable
to allow the sound to remain
for a few hours; but this should
be done only when you are
dubious of your ability to intro-
duce it again, it being necessary
then to make a decided dilatation
of the canal. As the days pass by
the parts will gradually enlarge
for the admittance of an
instrument of greater diameter
& in mild & recent cases we find

ourselves able to introduce an instrument of nearly the normal if not the normal dimensions of the urethra. The method just described is the one known as gradual dilatation, & is the safest & most often employed. The common stud sound is the instrument used in cases of stricture of large calibre but when we meet with the smaller strictures the flexible gum-elastic catheter is the more suitable instrument especially for the inexperienced practitioner. The patient should be taught how

to use the sound, I should be recommended to use it at intervals during the remainder of life. The method of rapid dilatation is much in vogue, & claims but little attention. It is accomplished by an instrument, which is capable of being enlarged at its extremity by a screw fixed upon its handle, & by forcibly stretching the stricture, a rupture occurs when the contraction is partially relieved. We shall now pass to that method of treatment in which we can confidently rely on the

patient that he is cured, which we are truly unable to do when the case has suffered the practice of continuous dilatation, Internal Urethrotomy. — This is the best & most expeditious way of treating a stricture; the operation & the passage of the sound for a few weeks & then the patient no longer is harassed by his late abdominal symptoms. After placing the patient under the influence of an anaesthetic, you take the urethratome & introducing it as far below the lowest stricture you withdraw the

handle of the urethrotome, & the stricture is cut from behind forwards upon its upper wall. The instrument of Prof. Otis is also the one used by the majority of practitioners. While the divided parts are healing, the passage of the sound daily or triweekly is to be insisted upon, as the rent will surely heal & contract more obstinately than before. The use of the sound should be gradually diminished, its continuance depending upon the tendency in each individual of the subsequent contraction of the stricture.

Although this is the proper & most expeditious manner of curing stricture, it should not be resorted to indiscriminately & regardlessly. To treat every case of stricture by internal urethrotomy — every case not at the meatus — would simply be folly; & internal incision — being attended after with fatal results, should not be resorted to in a careless way. External Perineal Urethrotomy being the remaining operation we shall dismiss it in a few words. In some cases where relief is urgently demanded, as in case

of impassable stricture, complicated with retention, or urinary abscess, this is the only operation that gives promise of relief. Sometimes after repeated attempts to pass the obstruction, this operation is necessary. It may be done by opening the perineum & passing a knife guided by a grooved director or bowed through the obstruction or by opening the urethra in front of the obstruction the stricture may then be reached by the finger or instrument in the urethra

as a last resort may be opened posterior to the stricture. To describe all of these operations would occupy too much space & would defeat the object of the essay which is brevity.

Joseph P. Kirkbride M.D.

in attempting to write a discourse upon any theme connected with Medical science, which has for its object the cure of the ills pertaining to mankind, I launch forth upon it with no little thought, as regards its difficulties.

The disease in question was known centuries ago, and since has been studied so thoroughly by pathologists whose names are emblazoned with everlasting honor that it would seem presumptuous for an embryo in the art to advance original ideas.

Typhoid Fever.

This is a common febrile affection

presenting a variety of symp-
toms, yet having in general
a certain recognizable character
it generally begins with chill
followed by fever but sometimes
it comes on insidiously and
increases gradually so that
it is often impossible to fix
the point of commencement.
The patient complains of general
weakness, soreness of limbs
and often of headache, the
skin is somewhat heated
face flushed and pulse ac-
celerated, there is also some
loosenness of bowels, amounting
often to diarrhoea with loss

of appetite occasional vomiting,
and sometimes slight vomiting.
When fairly underway, there
is frequency of pulse, heat
and dryness of skin flushed
face, headache loss of appetite,
thirst and general weakness
The pulse does not generally
exceed 90 to 100. For minute bat
of considerable fullness and
strength, is at other times
very frequent small and
compressible, reaching 120.
The tongue previously moist,
begins to become dry and
to assume a brownish color
The abdomen is distended

unless guarded he reaches the
door of his chamber and
often falls exhausted. Vitality is
so feeble in the skin that pilotted
surfaces often slough, and
gangrenous sores are pro-
duced in parts exposed to pressure
as over the Sacrum or upon
the hips. When a favorable ter-
mination is to take place
the tongue becomes moist
and begins to clear gradually
at the lips, and edges, the
pulse lessens in frequency,
the skin relaxes becoming
cooler and less dry the stupor
subsides, the patient joyes

more attention to things
around, the abdominal dis-
tentions [illegible] and in-
clination for food returns,
Convalescence is always tedious
sometimes months elapse before
the patient regains his former
health, a feeble paroxysm appears
every day, there are copious
sweats at night, appetite is
feeble and the bowels are
distended by slight causes,
these symptoms gradually
disappear, the appetite returns
the patient rapidly acquires
strength and flesh but often
the excession indulgences

sibility, urine accumulates in the
bladder [illegible]
[illegible] distention [illegible] the
[illegible] for micturition [illegible]
and then the muscular coat has
been so stretched; as to have
lost its [illegible]
and the [illegible]
[illegible]
[illegible]
or rupture the coats of the
bladder.

Anatomical Characters

[illegible]
of the body in which signs of
inflammation are not some-
[illegible]

hard and soft the hard ones when cut into [illegible], a layer of whitish yellowish [illegible] the soft ones are destitute of the whitish layer and are more uniform and soft, the hard patches may undergo ulceration, the soft ones as a general thing ulcerate

The Spleen is more or less disturbed is generally enlarged, it is sometimes [illegible] to be [illegible] or six times its natural size. The Kidneys & Gall [illegible] are also inflamed [illegible] the [illegible] [illegible] [illegible] of [illegible]

Causes — Nothing [illegible] is known of the Cause of [illegible]

It is generally where human
beings are crowded together
with unhalgeous food, and
vitiated air hence the often arises
in Prisons, and badly ventilated
hospitals, Camps and Ships,
It has been thought to be
Contagious, if so it is only
feebly so, Age seems to have
considerable influence over
it. It is rarest in all age
not frequent in children most
common between fifteen &
thirty years. It is generally
[illegible] not to occur [illegible]
in the same person. It may
occur in any season, but

Some Remarks

on

Malignant Tumors

Presented To

The Faculty of Maryland

University School of Medicine

by

James Edward Deeds

February 9th

1853

AN

Inaugual Dissertation

ON

Phosphorus

ITS

Therapeutic Uses

and

Physiological Actions

For the Degree of M.D.

In the

University of Maryland

[illegible]

Phosphorus

Its

Therapeutic Uses & Physiological Action

Therapeutic Uses: Phosphorus operates as a powerful restorative in loss of nerve power, and in all the manifestations of deranged nervous function to which it gives rise.

It possesses special vitalizing & energizing properties; and in the nutrition of brain and nerve tissue it has been proved by Drs. Radcliffe, Chatin, and others, to have decided virtues.

It is also employed with considerable advantage in Cerebral

and spinal paralysis, in melancholia, chorea, hysteria and epilepsy.

The chief use of Phosphorus in medicine is, as a nutrient tonic to the nervous system. In all cases of nervous exhaustion, whether involving the cerebral or spinal centres. In threatening cerebral softening, in syphilitic paraplegia from excessive venery.

It is the only drug which appears suitable to effect the brain centres. The writer believes from the very fact that Phosphorus is present in large

quantity in the great nerve-centres, and that the amount of this ingredient seems to have some direct relation to the activity of the nervous function, - being as much as two per cent in adult life, and less than one per cent in infants and idiots. - that Phosphorus is specially indicated as food for a weak nervous system, as Iron is in cases where there is a deficiency of red corpuscles in the blood. In Neuralgia, attention has recently been drawn by several writers as to its virtues;

and as neuralgia is often simply an expression of exhausted nerve power, the use of Phosphorus it seems to me would be commended by reason as well as has been proved by experience of eminent writers on the subject.

Phosphorus is indicated in atheroma of the Arteries, mollities ossium, & softening of the brain and spinal cord, progressive pernicious anaemia, nephritis, in atonic conditions of the cerebro spinal system and muscular weakness in children.

softening of the bones in rickets, irritable weakness of the sexual organs induced by excessive venery, incipient caries, progressive locomotor ataxia, paralysis adjutans, functional paralysis, purpura, marasmus, general debility, chronic catarrh, arthritic hemicrania, bronchopneumonia, weakness of the aged accompanied with muscular atrophy feebleness of memory giddiness and trembling of the voluntary muscles on exertion, phthisis pulmonalis in the early stages, gastro enteritis with emaciation,

ulceration, fistulous ulcers, diarrhoea of phthisis, epileptiform vertigo, neuralgia, pneumonia, incipient jaundice and fatty heart, it has lately been employed as a substitute for arsenic in the skin diseases for which the latter is used, notably, acne, acne indurata, psoriasis and lupus.

On this long catalogue of diseases taken from the different eminent writers of this age, the indications for bromine is no doubt based upon the physiological action of the agent. Whether or not its utility

in all of them will be confirmed by chemical experience remains to be seen; in many of them we know that it is useful, but I shall be cautioned to remember that Phosphorus is administered to correct an abnormal condition of the blood, blood chemically defective in nutritive power; and that this condition is the origin of many of the diseases above enlisted. And by the removal of the cause it is reasonable to expect good results. The writer has been judicially commanded as to

the great necessity for caution in the use of Phosphorus, as this agent so readily induces an acute fatty degeneration, when taken in poisonous doses or usually.

The propriety of its administration in large doses for long periods may well be questioned.

All eminent authors and writers agree that Phosphorus when taken in large doses are both improper and unsafe, especially in diseases of advanced life, for that the best results are obtained from the

persistent use of minute doses.
The writer has confidently been led to believe, that for all general purposes it will be found not only sufficient, but safer and more efficacious, to repeat small doses frequently, say every four or five hours, and in exceptional cases every two; than to surprise the system as it were by large doses.
Dr. Pereira writes that phosphorus in small doses excites the nervous, vascular, and excretory organs. It creates an agreeable feeling of warmth in the epigastrium, increases the full-

ness and frequency of the pulse, augments the heat of the skin, brightens the mental activity and the muscular powers. It operates as a powerful sudorific and diuretic.

In neuralgia, Phosphorus is almost a specific, as the one great characteristic of all great varieties of neuralgia is debility of the nervous system, produced by structural or functional enfeeblement of the nerves.

This affection, when not directly the result of some physical cause interfering with the integrity of the nerve itself, such

the pain is situated, is invariably due to loss of nerve power.

The very existence of pain is evidence of deficient energy. The remote factor may be malaria, syphilis, rheumatism, gout or any other causes capable of devitalizing the organism, and as a consequence that of the nerve cells.

Any remedial measures should be therefore directed principally to improving the nutrition of the nervous system generally, and to the removal of any constitutional taint that may be present.

The first indication is filled by simple hypophosphite mixt

Phosphorized Iron, and a generous diet. In facial neuralgia and brow ague it should be combined with Quinine, and if malarial influence be suspected full doses of Quinine should be given. The Phosphorus treatment is applicable to sciatic and spinal neuralgias. Local disturbance, arising from a loaded colon or irritable condition of the uterus or Ovaries will require special treatment.

The constitutional condition must also be taken into account. If syphilitic taint be suspected, Iodide of Potassium should be

prescribed. Neuralgia in women is frequently an expression of loss of nerve power, and the direct consequence of dissipation and excesses of various kinds, but over work, violent intellectual exertion will also produce it. Where the pain is located is of little moment, the treatment must be general. Tonics and Nux Vomica are remedies which seldom fail to give relief.

Women suffer more frequently and more intensely from neuralgia than men, they are liable to be affected by all the causes

which induce it in men besides the derangement of health associated with menstruation, menorrhagia, especially.

Hyperfecundation, rapid child bearing, frequent miscarriage, hemorrhage, prolonged lactation, and changes occurring at the climacteric period of life, all tend to induce a neuralgic condition of the nerves.

In these cases as in others the general treatment should be directed to the removal of the cause, whenever this is possible. During paroxysms of great pain Opium and Aconite

may be employed as palliatives.
The best mode of administering these is by hypodermic injection. The sixth (⅙) of a grain of the Sulphate of Morphia, with the 80th gr. of Atropia, will usually succeed in arresting a severe paroxysm of pain, and inducing sleep. The liniment or strong tincture of Aconite may also be applied locally.

A full, nutritious diet, with a fair allowance of wine, is a necessary part of the treatment of all forms of neuralgia. Full doses of Morphine are necessary and generally well borne:

The twentieth of a grain or the sixteenth of a grain may be taken. It is a good plan to give the latter dose an hour before an expected paroxysm and to repeat it three or four times a day, between the attacks. It is a wise rule, however not to exceed a quarter or at most, a third of a grain of Phosphorus in the twenty four hours.

Want of Sleep, is one of the earliest symptoms of a fatigued and overworked brain. It is one of the first that is relieved by Phosphorus, this has been regarded as very significant fact, in-

ating the favorable action of the agent. The importance of securing your patient sound sleep will be at once apparent when we call to mind that while simple repose suffices to relieve fatigue of the muscles, sound sleep alone can do it. That relieves fatigue of the brain.

When therefore want of sleep is the prominent feature in the case, little progress can be made towards regaining health and nerve power. If therefore sleep be not speedily induced, and is generally effected by a moderate dose of Bromoform in combination with

Chloral Hydrate, Sulphate of Morphia, or Cannabis Indica, in pill S. one or two at bed-time.

Habitual Constipation, is a very constant concomitant of nervous disorders, and the cause of much mischief as well as much comfort. If it is essential that it be corrected. Frequently this condition is due to want of tone in the muscular coat in the large intestines. When this is the case, it is relieved by adding Nux Vomica or Strychnia to each dose of Phosphorus as

℞ Phosphorus gr. 1/100
Extr. Nux Vomica gr. 1/4
M. = 1 ft. Pill No. j. S. one other t.d. after meals.

Physiological Actions. Phosphorus in ordinary medicinal doses gives rise to an agreeable sensation of warmth in the stomach. As it undergoes rapid oxidation much hydrogen is evolved, which, while in its nascent state, combines with a portion of phosphorus, forming phosphide of hydrogen. Circulation of this gas is therefore one of the unpleasant effects of phosphorus administered by the stomach.

The action of the heart becomes more frequent, the body temperature rises somewhat, the arterial activity and the

Muscular power increases, the menstrual flow becomes more abundant, aphrodisiac effects are experienced, and the urine and sweat are more freely excreted.

(2) A portion of Phosphorus taken into the stomach passes into the blood unchanged, most probably in combination with fatty matter. (3) The physiological action of Phosphorus in small doses appears to be increasing mental activity finds a therapeutical expression in the use of its preparations in cerebral disorders.

By the use of this agent insufficient

to the cerebral substance a material which it requires for the healthy performance of its functions. It acts most beneficially in the case of wakefulness in which the nutritive functions of the body are wanting in activity. The wakefulness of the aged is improved by the use of Phosphorus. Early decay of mental powers, associated with atheromatous changes of the cerebral vessels, and consequent imperfect nutrition of the brain, is benefited by minute doses of this agent. Long closes in this disorder of memory

life are improper and unsafe. The best results are obtained by the persistent use of minute doses.

Nuxophrine is one of the most efficient remedies in the treatment of impotence.

Respectfully submitted by
E. Milton Hollingsworth
Virginia

Jan. 26th 1892.

asphyxiated

In this stage the accoucher should
[illegible] his whole [illegible] to the
mother to prevent the fatal post-
partum hemorrhage which [illegible]
often [illegible] to [illegible]
which [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] contracts
sufficiently to expel the placenta
which will be done in a
short time. After the placenta
is taken away he should [illegible]
in the woman for blood clots
& bits of the placenta for
if left in situ the [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
held on the [illegible]

If the patient had sustained
the advice of an intelligent
accoucheur at the end of the
month both the patient & the

Plumbis.

by

Alberto Berlanga.

Feby 9th 1882.

Inflammation of the Pleura.

Definition — Pleuritis, or pleurisy, is an inflammation of the pleural membrane. It is usual to consider two forms acute and chronic. It may occur as an independent primary affection, or it may be secondary to some other disease.

Causes. — There can be little doubt that many cases arise from exposure to cold especially when a current of cold air is directed against the body in a perspiring state. There is probably a constitutional condition of some kind which determines the mirror, but the state can not be defined. It is uncommon in old age, but is

more common in early life up to the middle age. The secondary disease is much more frequently seen than the primary. It is very frequently associated with pneumonia by extension of inflammation through contiguity of tissue; often the pleurites is the more important of the two diseases. It is also associated with catarrhal pneumonia, bronchitis, pericarditis, pyaemia and other affections of the thoracic organs. It may be excited by deep seated abscesses, cystic caries of a rib etc. A discrasia may be a cause; it is known that various morbific matters in the blood may excite more inflammation as

rheumatism, gout, cancer, diabetes etc.
Pathological Anatomy. — The principal lesion is hyperaemia of the subserous connective tissue, while red points due to congested vessels are rather scattered over the pleura. The membrane has an arborescent appearance, and is of a reddish color. The injected portion of the membrane is dull and rough; the epithelium is swollen and rapidly cast off; the subserous tissue becomes crowded with migrated leucocytes. Large flakes of exudation may be thrown off. If there be present much liquid, the flakes or masses of fibrin are seen floating in it, or they may be [illegible]

ed with the serum and form a
milk-looking fluid. The exuda-
tion which thus forms on the surface
passes through various changes. It may
undergo fatty metamorphosis or may
become organized, large thin-walled
vessels develop from the leucocytes
and close connections are formed
between the neomembrane and the
pleura, according to Lindfleisch.
Again broad patches of membranous
exudation on the opposing surfaces of
the pleura uniting by their margins,
a cavity is thus formed in which there
may be serum, sanguinolent serum,
and flakes of exudation, while close
adhesions unite the pleural surfaces

for a greater or less distance. These secondary cavities form at the base, between the pleura and pericardium as they retain the effusion in a fixed position, [illegible] to [illegible] of [illegible]. These are the examples of dry pleuresy, in which a very plastic exudation is thrown out on the two surfaces, a small extent of the membranes union taking place either directly or by a connecting band. In pleuritis, a more or less abundant exudation is poured out. According to the nature of the effusion, the cases of pleuresy are divided into the sero-fibrinous, the purulent and the hæmorrhagic.

Symptoms. As dry pleurisy is the simplest form it will be best to consider it first. The [illegible] with chilliness, fever, pain and dyspnoea, frequently there is little or no fever, no respiratory disturbance, only the pain in the side to indicate the nature of the attack. If the former symptoms are present they do not continue longer than thirty-six to forty-eight hours; if the latter the symptoms rarely necessitate confinement to bed. The physical signs of dry pleurisy are as follows: On inspection the extent of the inspiratory movement is seen to be lessened by the pain. On percussion there is no change in the sonority. On auscultation the respir

tion will be feeble on the affected side, because of the pain elicited by the expansion in inspiration; and, if the pain is severe, the inspiratory movement is rather suddenly arrested before completion, but if the pain is slight there is no change in this respect. During the first two three days there will be audible on auscultation a sound, due to the rubbing together of the roughened surface of the pleura — synchronous with the inspiratory movements. If strong and loud the friction-sound produces a vibration of the chest-walls, or fremitus, which is recognizable on palpation. Dry pleurisy terminates in two ways — by resolution, or by adhesion. [illegible]

lution takes place, the [illegible] and fever subside, and the friction [illegible] gradually disappears. Dry pleurisy occurs at the side and base of the thorax. Acute pleurisy with effusion, the ordinary form, sets in as any other acute inflammation, with chill, and fever, with pain in the side, or this is in other cases for several days a daily paroxysm of fever, without any local symptoms for the first few days; or again, there are cases in which pain in the side and effusion have preceded the febrile movement. The fever which follows is a continued fever with an evening exacerbation, and continues up about eight days, with little variation.

If there are rigors occurring every day, it is probable that the effusion is purulent. The type of fever is not peculiar to the disease, and is not therefore diagnostic; the temperature does not often exceed 104° Fahr., and ranges from 101° to the former point. The pain is usually acute, lancinating, circumscribed, and is increased by breathing, coughing, or abrupt movements of the body. The duration of the pain is variable; it may cease in three or four days; it may reappear after having ceased for a time; it may persist during the attack, so long as it is present it affords evidence of the persistence of the inflammation. The severity of the pain indicates the violen-

ce of the disorder. Dyspnoea is also a prominent symptom in pleurisy. When the pain is severe, the inspiration is suppressed and frequent; hematosis is accordingly impaired, and respiration is embarrassed from the cause. Fever, by increasing the waste of tissue and the excretion of carbonic acid augments the necessity for oxygen. When effusion occurs, the respiratory field is narrowed, and mechanical difficulties are created by the pressure. Before effusion has taken place the position on the sound side is easier, for as Traube has pointed out, the blood gravitates from the diseased side, and thus relieves the

nerves of pressure; but, when the effusion begins to compress the lung, the position on the diseased side becomes the easier. When there is extreme pressure, the patient can not lie low. More or less cough is present and from the beginning. The effusion comes on the cough declines, but when there is considerable effusion cough is induced by the attempt to take a full inspiration. Ets there are anorexia and more or less intolerance with digestion the waste of tissue proceeds rapidly — on one side insufficient supply on the other increased oxidation. Emaciation, loss of strength are prominent among the symp-

tive symptoms in pleuritis. The countenance has an expression of weariness, anxiety and exhaustion, may be pale or cyanosed. The urine is scanty, high colored, has high specific gravity. Physical signs. On inspection, the movements of the affected side are seen to be restricted, to be suddenly arrested, and with an expression of pain. On palpation the absence of vocal fremitus is a very important symptom. On the sound side the vocal fremitus is exaggerated. The character of the percussion note is much affected by the quantity of liquid present. There will be absolute dullness over the whole of

the affected side, except posteriorly over the root of the lung, when the cavity is full and the lung flattened against the spinal column. The value of the percussion-note is increased by the absence or presence of a sense of resistance. When there is fluid in the thorax, the sense of touch receives a different impression from that produced by the normal condition. In the first stage of pleurisy the respiration is jerking, and on the affected side the lung is imperfectly filled with air. By auscultation these characteristics of the breathing are ascertained—inspiration has a catching or je-

king impulses and hence the inspiratory vesicular murmur is feeble, because the lung can not be filled with air. With the increase of the fluid in the chest, the vesicular murmur becomes more and more feeble and then ceases. When the lung is compressed but the bronchi are still permeable, and the body of fluid not too great, the breathing has the bronchial character, and has no vesicular quality. When the lung is flattened against the spine, no breathing sounds of any kind are heard. Similarly, bronchial voice or bronchophony is audible from the still pervious bronchial tubes,

as is the bronchial breathing, but this ceases as the corresponding breath-sound does, and no voice-sound remains. With the disappearance of the effusion the lung expands, and there is a gradual diminution of the dullness, until the percussion note becomes normal. The vocal fremitus is restored in the same order. The voice and breath sounds are at first bronchial, then gradually become vesicular; the friction sound disappears and continues up to the full restoration of the vesicular

of absorption and were supposed to be due to changes in the parenchyma; but are now known to be produced by the opening up of tubes long compressed.

Course, Duration, and Termination. — Pleurisy does not pursue a defined course, nor does it terminate in crisis, which is the normal mode for pneumonia; but under favorable circumstances the development is gradual and the return to health is by downstages. The pain [illegible] increases for the first four or five days and then continues for eight or nine days pretty constantly at a uniform height.

Then comes the period of effusion. As the temperature falls, the pain subsides and the dyspnoea diminishes unless there is a large effusion. The length of the time the effusion continues at its maximum varies from one to five days. The absorption may take place quite rapidly at first, but it does not continue at the same rate after the first two or three days. The changes in the condition of the inflamed parts are represented in the improved appearance, better appetite and increasing strength. A marked change takes place in the urinary secretion. The absorption of the last part of the exudation is exceedingly

slow. The return toward health is often interrupted by fresh attacks of inflammation. If, after the twenty-fifth to the thirtieth day, there is no appreciable diminution in the stage of the effusion, the acute stage ends and the chronic begins. It has already been indicated that the exudation may be purulent from the beginning, and under these circumstances the symptoms have at the outset the septicaemic character above described. The termination is in resolution, in the chronic ~~stage~~ form, in death. The average duration of an acute uncomplicated case is two to four weeks.

Diagnosis.— The most important

ant difficulties in diagnosis are experienced in the differentiation of pleurisy with effusion from conditions in which the lung is solidified or displaced by tumors cysts, etc. Pleurisy is distinguished from croupous pneumonia by reference to the rational and physical signs. Pleurisy begins by chilliness, which persists for several days — pneumonia by a severe rigor, rarely two; the pain in pleurisy is a stitch a lancinating pain which can be covered by the finger — pneumonia the pain is more diffused and not so severe; the fever in pleurisy is continuous in pneumonia there is a distinct crisis or lysis, somewhat from the fifth

to the eleventh day. The duration of pleurisy is indefinite — of pneumonia self-limited; the respiration in pleurisy is feeble — of pneumonia, tubular or bloody; in pleurisy the vocal fremitus is absent — in pneumonia it is exaggerated; in pleurisy there is a friction sound — in pneumonia there is no friction sound; in pleurisy there is more decided dullness — in pneumonia the percussion note is not so flat. The differential diagnosis between pneumonia and tumors of any kind is to be made principally by the history of the case.

Treatment. — The aim in the pleuritic inflammation begins and

the pain is a good indication, the patient should receive a full dose of quinia and morphia (ʒj quinia and gr. ss. morphia for an adult) and the effect of this should be maintained by the repetition of smaller doses. If the stomach is irritable the morphia can be administered subcutaneously, or if the pain is very acute. If there be much fever — a strong pulse and elevated temperature — and the stomach not irritable, digitalis may be combined with the quinia and morphia — one grain every four hours. If the subject be plethoric a dozen cups or leeches, drawing six ounces of blood, can be applied with advan-

tage. Mustard plasters and turpentine-stupes as hot as can be borne afford relief. The blood pressure can be reduced also by active purgatives of which the salines are best. The only agents which possess the property of dissolving an exudation are the alkalies, and the best is ammonia. Carbonate of ammonia can be given in a solution of the acetate. They should take the place of the quinia and morphia. Absorption will be much aided by keeping up free outward osmosis through the intestinal mucous membrane by saline laxatives. The same process can be carried on through the skin by the use

[illegible] (iv). [illegible]
occurred after the operation of the [illegible]
[illegible]
When the [illegible] is large the [illegible]
[illegible] should not be [illegible]
A [illegible] of [illegible]
[illegible]
[illegible]
[illegible]
cations. Absorption is promoted by
lessening the water of the blood, which
can be accomplished by saline laxa-
tives and jaborandi.

[illegible]

[illegible]

Thesis

[illegible] slow although the calibre of the blood vessels remains the same with this slowing of the circulating blood the white corpuscles [illegible] [illegible] walls of the bloodvessels, [illegible] make their way through the walls of the vessels [illegible] through the veins [illegible] [illegible] same capillaries [illegible], but this [illegible] all inflammatory conditions, unless the inflammatory irritant [illegible]

the interesting phenomenon of
the emigration of the white cor-
puscles takes place having
never seen this remarkable
[illegible]
aid of a microscope, I will
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
ting fluid, the white corpuscles
are seen to stick close to the
sides of the vessel walls, they
[illegible] are seen to become

[illegible]

are pressed through in consequence
[illegible]
[illegible]
[illegible]
[illegible]
opinion on the probable cause
of this stage of inflammation.
[illegible]
seem to you to have a student
[illegible]
[illegible]
of the morbid action, [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
ones of our great Pathologists

mechanical or chemical; or
to put it in other words
and though which will pro-
duce, an alteration in the
arrangement of the molec-
ular, or cell elements, of
a part, to which the ir-
ritant is applied. And
at once this beautifully
balanced contrivance is
disturbed. The blood meet-
with increased friction
and resistance, becomes
unduly heated, and short-
ly after the inflammatory
process has gone out.
The extent, sufficient

to cause the secondary slowing of the blood circulation in the blood vessels, of the stomach, there also takes place the migration of the white corpuscles, and some of the watery elements of the blood. I will not go into the description of how these changes take place as I have endeavor to explain it as well as limited amt of time and paper as will admit of, suppose it to say that their being lessened resistance to the escape of the watery and

may be found the products
of the increased tissue but
amorphous, which is pres-
ent to a more or less a-
lent in all inflammatory
conditions. The character-
istics of an exudation
which occurs, determine
the extent and the height
of the inflammatory action.
I will here state that the
tendency of to spontaneous
coagulation is character-
istic of an inflamma-
tory exudation. I will
not attempt to give the
many theories respecting

the origin of the pus-cell suffice, it to say, according to our theory, in the white corpuscles, is to be found the sole origin of the pus cell and according to the other, equally good and accepted authority, the pus cells have their origin in the fixed, and various cells outside of the blood-vessels. The intensity of the inflammation determines the amount and character of the exudation. If the inflammatory process has

of the disease that the
exudation is said to be
hemorrhagic when the red-
corpuscles have escaped
in sufficient numbers to
give the exudation a
red appearance. The usu-
al results or terminations
of inflammation is in
resolution, suppuration
ulceration, and gangrene
I will not endeavor to
describe these differ-
ent terminations, in
~~in~~ detail but simply
speak of the differ-
ent results of this mor-

action we are consid-
ering, and merely mention
some of the most promi-
nent features, in each
individual case.
Where a part inflamed
is said to have termina-
ted in resolution, it is
understood that the parts
regain their former
healthy relations, and
appearances this fortu-
nate change is brought
about by the absorption
or carrying off of the
products of the inflamed
tissue or tissues, by the

corpuscles collect in a circumscribed mass, there is formed what is commonly called a pus-cavity, or abscess. When inflammation results in ulceration, there is meant that after the inflammation has subsided, there is left behind, or remains a tendency to or a molecular death of the part, and lastly when inflammation terminates in gangrene it is an evidence that

the inflammatory irritant
whatever it may be has
been very intense, and
sequently the resulting
inflammatory action
has been so severe that
the blood supply has
been completely cut
off from the affected area
and death in mass
is the result. This for-
tunately is a compar-
atively rare result.

"

Thesis.

Laryngitis,

Respectfully submitted to the Faculty of the University of Maryland School of Medicine.

A. R. Sanks.

Session
1881–'82.

Very important diseases affecting the respiratory apparatus are seated in the region above the chest, viz: larynx and trachea. Pathological changes of the larynx frequently produces corresponding changes in the trachea, and it is quite rare for the latter to be affected without the former. The larynx is made up of four cartilages, namely: cricoid, thyroid arytenoid, and epiglottis. The epiglottis was for a long while supposed to prevent food and drink from entering the larynx during deglutition; but this is proven to

be erroneous, since it has been removed in some of the lower animals without serious inconvenience. The nerve of the lip is quite small in size which is a notable point in laryngeal affections; being in the male adult after death about an inch in depth and at the base about a quarter of an inch in width, though smaller in the female and child. The size of it varies considerably between inspiration and expiration. The vocal chords in the living animal when examined, are seen to separate widely during inspiration,

and to return to their normal position during expiration, - constituting the so-called respiratory movements of the glottis. There are other muscles of the larynx whose movements are influenced by the will in the acts of phonation; and all these muscles are subject to constriction and paralysis. The voice is located in the larynx and the different forms of vocal sounds are brought to bear in the various symptoms of disease. The walls of the larynx are extremely firm and unresisting to pressure internally, which do readily re-

counts for an obstruction of materies morbi in the small space between the vocal chords. Submucous tissue is also very abundant; especially, above the vocal chords, which is much more apparent in the adult than in the child. This point serves to mark the differences of the disease during and after infancy

Simple Acute Laryngitis.

Causes— The mucous membrane of the larynx is placed in such a position that it is very readily subjected to the obnoxious influence of gaseous and uniform agents, such as tobacco

fumes, ammoniacal gas, chlorine and ethers. Dr Flint relates a case in which he says that a distinguished professor of chemistry lost his life from laryngitis by inhaling a corrosive acid from a pipette, the extremity of which had been broken. The air may contain very fine solid particles of material, liable in itself, to inflame the laryngeal mucous membrane; although, more frequently, the larynx is affected by the state of the atmosphere itself. A long continued exertion of the voice in speaking, especially in the open air,

may induce catarrhal inflammation. "Taking cold" is a prolific source of laryngitis. Impure air that has been respired for a considerable length of time, may produce this disease. Climate has quite a decided influence on it; thus, a cold, damp or changeable climate, has a very marked proneness for producing laryngitis; while on the other hand, a dry, warm, or uniform climate, has a tendency to relieve it. Both sexes are equally subject to it, and no age is exempt.

Pathological Anatomy.... The ab-

acteristics of simple acute laryngitis have no practically important feature. The same amount of inflammation in any other part of the system would scarcely be noticed. The danger is not due to the persistency nor extent of the inflammation; but to the obstruction that the air has to encounter in traversing the narrow rima glottidis and the unyielding laryngeal walls. These present a certain amount of hyperaemia of the mucous membrane. the color of which, — a dark, reddish brown.

Symptoms. — The constitutional

disturbances, in ordinary cases, are very limited. The symptoms of a local nature, are abrasion, heat and tickling sensations of the larynx and pharynx. A dryness is always present and a feeling as if a bolus of foreign body was in the throat. The thyroid cartilages, on being pressed, present extreme soreness and pain. On extreme cases, the initiatory symptoms of the disease, are marked by a chilliness, general malaise, anorexia, and so forth. The pressure of the bolus in descending through the larynx in swallowing, causes much pain.

A noisy, hoarse or toneless cough or the sonorous "croupy" cough in children soon supervenes. At first the cough is dry and produces a sensation of irritation to the larynx in its passage through it: but afterwards, a secretion is poured out, which has a tendency to loosen the cough and expectoration. Frothy mucus is now expectorated, occasionally tinged with blood, but in extremely severe cases, pure blood is expectorated. The sputa resuming the appearance of a muco-purulent form. The pus cells being in excess, which may con-

tain young and cast-off ciliated epithelial cells. The voice is first hoarse and phonation gradually becomes more and more difficult, till finally, aphonia may be induced. If there be much swelling of the vocal chords and ventricular bands - a deep, oppressive sense of anxiety as if there was need of air. There may be various changes in the voice - may be a high pitch, a low pitch, or its timbre may be altered in a corresponding ratio. These changes in the voice are due to the condition of the muscles moving the arytenoid carti-

lages - the swelling and tension of the vocal chords. Examination with the laryngoscope will reveal the variations which these chords have undergone.

Diagnosis. - The most marked characterestics of acute laryngeal inflammation, are loss of voice, husky, stridulous cough accompanied with febrile and other symptoms. The difficulty of breathing is due to obstructions of the larynx, which is quite manifest from the anxiety of the patient, the diminished frequency of the respirations and the absence of pulmonary disease. The diseases which

acute laryngitis is most likely to be confounded with, 1st laryngitis with exudation of lymph, oedema of the glottis, and laryngismus stridulous. The presence or absence of exudation of lymph in cases of laryngitis is generally self-evident; oedema of the glottis may be easily ascertained; spasm of the muscles without inflammation can most frequently be discriminated from simple acute laryngitis.

Prognosis.— Acute laryngitis in the adult is a very grave affection. If mild, it passes through its course in a week; if severe, it lasts from three weeks to a month. Both may,

by repeated relapses, last for a long while and finally develop into the chronic form. The gravity of this disease is due to the obstruction in the larynx caused by submucous infiltration. Surgical treatment may be called for in obstinate cases. The fatality of this disease in young subjects is much less than in adults, although the rima glottidis is smaller in children, the submucous infiltration is much less

Treatment.— The severer cases must have rest and confinement to bed. the milder, a uniformly but not too much heated apartments. The air of the room should be kept moist

by the vapor of water disseminated through it. Saline cathartics should be given to move the bowels. Tinct. of aconite root - one drop for a child and two drops for an adult every two hours is highly recommended by some authorities for inflammation of the mucous membrane. Should there be much cough and especially if it is of a croupy character, two to five drops of deodorized tincture of opium and one or two drops of fluid extract of ipecac may be given together. A warm or cold pack should be wrapped about the neck after mustard has been applied, then the

patients' feet may be placed in a mustard pediluvium. If there is much disposition to spasm of the glottis, bromide of potassium may be used - mercury is stoutly advocated by some practitioners in this affection. Dr. Austin Flint is of the opinion "that although the antiphlogistic and sorbefacient powers of mercury have doubtless been greatly overestimated, it is not certain that it exerts no remedial influence in these directions. The general depressing effect and other evils of mercurialization are of little comparative account, provided the remedy will

prove in any degree useful in its influence on the local affection". "If mercury is used", says he, "it should be induced early and rapidly, either by small doses repeated at short intervals, or by large doses guarded by opium, mercurial ointment being added". Dr S. Henry Dickson says: "calomel is regarded by many practitioners, both in England and our own country, as endowed with some beneficial influence of a specific nature, which adapts it to our present uses, and a large experience has accumulated many facts in confirmation of this opin-

ion". Dr Bartholow says: "that there are practitioners who still hold to the aplastic virtues of calomel, and use this remedy in large doses, with asserted success, but the most approved authorities are opposed to both opinion and practice". If the patient is a robust, plethoric temperament, especially, if the inflammatory attack is marked by severe febrile excitement, depletion may be judiciously resorted to at once; but the lancet not called for generally, and is quite frequently contraindicated. Local treatment is often beneficial such as fomentations and poultices

applied over the sternum. If the room can not conveniently be impregnated with steam or vapor, a suitable apparatus can be employed so that the patient can be enabled to inhale the vapor of hot water. Compresses dipped in ice water may be applied over the inflammed region, which may be kept up if the spasm of the muscles be relaxed. Topical applications of nitrate of silver to the larynx with a probang is often advised. When the obstruction has become so great as to render life imminent, tracheotomy is to be employed. Should apnoea be the direct result of in-

yngitis, this procedure will, in the vast majority of cases, be the direct means of saving the life of the individual. The <u>time</u> when tracheotomy should be employed, must be accurately and carefully fixed upon. After lividity from swelling and infiltration occurs, it should never be delayed. Obstinate lividity is a very grave indication, and the longer it persists, so much the less can a success from tracheotomy be expected. Recovery of the voice after convalescence is fully established is very slow, the pitch and quality being changed for some time af-

forward. Chronic laryngitis. — This is also an inflammation of the mucous membrane, but not so violent as the acute form.

Causes. — The chronic form of laryngitis arises from the same causes pretty much as the acute — may either develop into the acute or be the sequellae of the acute form of laryngitis. Smoking tobacco, alcoholic excesses, public speaking, loud and prolonged singing are the most direct causes. The more predisposed to it are those in the middle station of life and the male sex.

Pathological Anatomy. — The mu

cous membrane is much thickened and indurated; and the characteristic lesions of this membrane are ulcerations more or less distributed. Swelling of the ventricular bands to such a degree, that the arytenoid cartilages and vocal chords are incapacitated for the performance of their natural functions. Frequently the ulcerative process completely or partially destroys the vocal chords and sometimes involves the muscles and cartilages. The epiglottis may also become involved. The enlargement of follicles present a granular appearance.

Symptoms.—There is quite an uneasy sensation in the throat as if tickled by a feather which causes the patient frequently to hawk and clear his throat to rid it of this unpleasant feeling. Exposure to cold and prolonged talking has a tendency to aggravate this sensation. The voice is the most diagnostic symptom of this affection. It may be either hoarse, husky or wheezing which may end in aphonia or dysphonia. If there is much hoarseness present, ulceration and thickening of the vocal chords may be suspected. Cough is a prominent symp-

tom. Expectoration is more or less associated, which may assume the characteristics of mucous, muco-purulent or pus - often tinged with blood and may have a very offensive odor. However, the two latter symptoms are generally the result of tuberculosis of the lungs, with which laryngitis is often associated. Deglutition is frequently inconveniently effected in this disease, and at times is quite painful.

Prognosis.— This disease when once fully established is very chronic, although subject to intermissions, that is, it may seemingly

be entirely eradicated from the system and for years may not show a symptom of laryngitis, the patient congratulating himself upon a safe recovery when all at once, without the least provocation, the disease may be ushered in with all its former virulence. A permanent cure may be effected by proper treatment, and precautionary measures persevered in for a long while, inasmuchas, this disease, not unlike others of a chronic type, requires a great deal of time to remove the cause in order that the effect may follow.

Treatment.— Chronic laryngitis must be treated in relation to its most prominent symptoms. Thus if tuberculosis of the lungs be present, this above all other symptoms should receive consideration. If syphilis exists, anti-syphilitic remedies are indicated. Local applications often prove beneficial. In making topical applications the laryngeal mirror is used. Medicated sprays are frequently used with very happy results. Solutions of tannin, acet of zinc, chlorate of potassium, bromide of potassium, nitrate of silver, and sulph

morphia if much irritation exists. Dr. McSherry recommends taking a glove-sewing a piece of sponge to fore finger, then dip into a solution of nitrate of silver and apply to the glottis. Counter irritation over the affected part with croton and small blisters are recommended by some. External applications of tinct. of iodine, ointment of red oxide of mercury are useful. The patient should by all means keep the affected parts at rest avoid taking cold and look to the general health.

Oedema of the Glottis and

Infiltration of the Larynx.—

Anasmurhus, these affections are associated with, more or less, all diseases of the larynx; they need not be noticed separately, since they have already, and will be alluded to.

Spasm of the Glottis.—

Pseudo Croup.— Laryngismus Stridulans.— This disease appears to be an affection peculiar to infantile life and usually attacks during dentition or weaning infants, but may be induced prior to that period. There is a spasmodic contraction of the laryngeal muscles, caused by

an irritation of the terminal filaments of the pneumogastric nerve in the mucous membrane of the larynx. Spasm of the glottis is a functional disease i.e. it is not dependent upon inflammation or lesions within the larynx. It affects the respiration, but does not bring on cough, and is the same as that disease called by most mother "fits of holding the breath." Is most frequently known by the name of Laryngismus Stridulus and from a supposed connection with a chronic enlargement of the thyroid gland - has been

called "thymic asthma".

Symptoms.— Spasm of the glottis is not the premonitory symptom. The child may complain for the first day or two of a simple acute catarrh. There may be slight fever present; usually some slight nasal catarrh; the voice may be hoarse; may have a slight cough and the child will complain of having a "bad cold". As evening approaches, the voice gets hoarser and a more ringing tone. In the night the child suddenly wakes up with a brassy, metallic resonant tone what is called "croupy". This affection is entirely spasmodic; and

hence, is often called "spasmodic croup". There is no liability to this affection developing into the so-called true croup. The laryngismus may recur for two or more successive nights. This affection sometimes, though rarely, occurs in adult life.

Prognosis.— The ordinary occurrence is a simple acute catarrh, which causes an attack of spasm of the glottis terminating in from one to two days. It is a disease of but little importance, but sometimes spasm of the glottis accompanies the tuberculous meningitis. For instance, it may exist

during the course of true croup, diphtheria, oedema of the glottis, and in such cases, is frequently the direct cause of death - adding materially to the difficulties by the frequent spasms of the laryngeal muscles. It nearly always exists in coryza, in bronchitis when it arises from indigestion or acute catarrh.

Treatment. — If the stomach is over loaded, a mild emetic may be given. A few drops of the fluid extract of Ipecac, given every twenty minutes till nausea is induced, is highly recommended by some. The cold pack is very useful around the neck. Bromide of

potassium in five to twenty grain doses, with a little chloral added is very beneficial. Ten drops to a drachm of paregoric is highly advocated. As this is not a grave malady, the simplest measures will usually abort the paroxysms. Children that are predisposed to this affection should receive prophylactic treatment. Cold baths in the morning - syrup of iodide of iron or the lacto phosphate - suitable clothing out door exercise are the measures most generally adapted to prevent a recurrence of the disease.